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THE EVOLUTIONARY SPIRIT FOR BETTERMENT IN MEDICAL EDUCATION *

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The time is opportune to indulge in a few remarks relative to medical education. The evolutionary spirit for betterments pervading the land is significant. The teaching and practice of medicine are being influenced by this same spirit. An opportunity, full of possibilities, now presents itself to this body to manifest this spirit by inaugurating a resistless movement for betterments within our educational ranks. The perturbed condition of medical matters in America and abroad, cries for rectification. Medical education must be standardized, systematized and glorified. Innumerable details must be considered and generalized. The materials are present in abundance, the opportunities are ripe, and everything is in readiness for the master-strokes of our educationalists.

A grave responsibility, in fact, rests on this body. You have before you no easy task, but a mighty labor—a labor in which we proffer you our undivided support and prayers. It is your task to evolve out of chaos a practicable system that will be a credit to yourselves and a lasting monument to the genius and tact of American democracy.

I would specify among the many subjects that would profitably come under your deliberations, these in particular: First. *State Medical Education*; second, *Interstate Medical Relationship*; third, *A National Standard of Medicine*.

I notice by your program that "Standards of Admission to the Medical Schools," "Administration of Entrance Requirements," "The Fifth Year in Medicine," "The Medical Library," "What the Internist Wants the Anatomist and the Physiologist to Teach," and "What the Surgeon Wants the Anatomist and the Physiologist to Teach," *etc.*, are to be presented and discussed by members of this body of specialists in medical education. These presentations and these discussions will be gladly received and thought over, again and again, by the medical profession of this city, state and country.

OVERCROWDING OF THE MEDICAL PROFESSION

One great and lamentable condition stands out very prominently in America, namely, that the medical profession is overcrowded—not by the survival of the fittest, but by the survival of the unfit. This is a serious evil which must be remedied. With a population of about 90,000,000 in the United States, we have at least 140,000 doctors (1 to about 642+) who are legally qualified to practice. In England the proportion of doctors to the population is about 1 to 1,250 and in France 1 to about 2,175. In other nations the proportion is still more favorable to the medical profession. To be concise, we do not need more doctors in America, but we do desire a better brand of doctors. It is my deliberate opinion that this evil, which is due to the large number of irresponsible medical colleges, would be remedied by free medical education.

FREE MEDICAL EDUCATION

The fulfilment in the future of long-cherished ideals in the teaching and practice of medicine is a potent reason for the advocacy of free medical education. Free medical education would ensure a proficient medical profession, which, in turn, would protect the public health and enlighten the masses on medical matters. Thus disease would be forestalled, suffering alleviated and deaths prevented. From a financial standpoint, alone, free medical education would prove a boon to the state, for, since every premature death is a loss to the state of from $1,000 to $2,000 by the lowest computation, every life saved through the agency of the medical profession is a corresponding gain. The number of preventable diseases is many, and the number of deaths due to ignorance is simply appalling.

Free medical education, moreover, would play an important rôle in abolishing certain undesirable private medical schools. The teaching of medicine is too sacred a thing to be trusted at all in the hands of these petty medical colleges. In this connection we would do well to follow the example of Germany, which has demonstrated to the world that it has the best systems of teaching and maintaining scientific medicine.

Allow me to conjure up before you the ideal educational tree as I would fain see it in this state in the near future. Behold, it is a stately tree, with its roots firmly implanted in the common schools, from which it receives its nourishment; its sturdy trunk embodying the high schools, from which it receives its stamina; and its branches outspreading into the various departments of the university, where it attains that maturity which enables it to put forth good fruit in arts, in agriculture, in engineering, in science, in law, and in medicine. Then, with the aid of free medical education, would this stately tree bring forth in medicine the rich and abundant fruits to which our commonwealth is logically entitled.

In our grand educational scheme we must not forget that the life motive of a child naturally begins to germinate at puberty. If all were taught that at this age they should begin to map out their futures and were aided in this by the mature judgment of efficient teachers, according to the symptoms and signs presented by the individual, they would be enabled to decide early on a life career. Especially in medicine is it true that the student should begin on his training early in life.

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* Address of Welcome to the Association of American Medical Colleges, Chicago, Feb. 27, 1911.

MEDICAL TRAINING AND TEACHING

The teachers in the college of medicine should be well paid for their services. In this regard all the colleges of a university should be treated alike. The courses should be made largely elective. This elective system would create a spirit of emulation between the professors as well as among the students. The medical student should be given an examination every year, written and oral, and should moreover be scrutinized socially, politically, and religiously.

Didactic teaching and the reading of books is no longer the sole source of knowledge. Memorizing Gray's "Anatomy" and other text-books is unprofitable. I remember when the student who was most lauded at college was he who gave his answers verbatim as he had read the information in a text-book or received it from the lectures of his professor. The introduction of the laboratories into universities and colleges completely changed the method of teaching and learning. The spirit of experimentation is developed by this laboratory method of training, and an impulse for thought and study is inspired. The student of to-day sees for himself, handles for himself and thinks for himself. The young doctor in the hospital investigates what he hears. The laboratory man expresses doubt of what is presented by others and sees for himself.

There is nothing, it seems to me, of much more importance in the successful teaching of medicine than the ctual personal contact of professor and student, when he professor may inspire and the pupil be inspired by that subtile quality called personal magnetism. While individual attention by the professor to the student is not always possible, yet much can be accomplished along this line by limiting the size of the class—say to twenty or twenty-five members. This comes back as near as possible to the old doctrine of Locke, Montaigne, Milton, Spenser and others, namely, that the student receives the greatest amount of educational benefit under a tutor.

No matter what method of teaching is employed, however, no student can hope to know it all. Time was not long since when we took an arts course and a medical course at the same time. Professor Eliot, the late president of Harvard University, said: "When I was an undergraduate at Harvard I took almost every course that the college offered. Now I think it would take a bright, active minded student at least one hundred years to go through all the courses the college offers."

THINKERS

"Thinkers rise upon us like new stars, a few in a century." Thinkers are not unlike runners inasmuch as some excel others—those in the lead think farther and faster. Incidentally I might mention here that while some of the medical profession think for themselves according to circumstances, environments and conditions, still many of them, as a result of their bad training, "follow the lead" of some one else. The true philanthropists are thinkers and altruistic specialists. To this class belong Rhodes, Carnegie, Rockefeller and others. What a far[illegible]ng influence the philanthropy and thin[illegible] will have for all time upon the edu-[illegible] Just think of the furore that has [illegible]arnegie Fund for Medical Educa-[illegible]s stirred us to the utmost and has set us to thinking afresh. Great praise must be given to John D. Rockefeller for all that he has done for general education and research in medical sciences through his unbounded spirit for the welfare of mankind. A new era has been created, a new future is before us, and it is the honorable duty of this distinguished and learned body to aid Carnegie and Rockefeller in their great work.

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A SAFE AND RAPID METHOD FOR THE ADMINISTRATION OF ANTITYPHOID VACCINE

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Since the introduction into the British army of the inoculation of bacterial vaccine as a prophylactic measure against typhoid fever, by Wright and Leishman, medical officers, both at home and abroad, have become thoroughly convinced of the value of the procedure in the military service; so that antityphoid inoculation (or vaccination) can no longer be said to be in the experimental stage. In fact recent orders from the War Department make possible compulsory vaccination of an entire garrison in the presence of an epidemic. So consistently favorable have recent statistics been, that it is safe to say that this method of protection against a dread disease will soon cease to be almost exclusive property of the military organization, but will be accepted and eventually enforced as a safeguard to municipal health.

It is not my purpose to attempt to advance argument in favor of the practice or to explain its rationale or results. A careful perusal of the several recent articles by Major Frederick F. Russell, Medical Corps, U. S. A., would, it is thought, convince the most skeptical of the value of antityphoid vaccination and of its effectiveness. The question which will be considered is, Granted a large number of persons from civil or military life to be vaccinated, how can they best be handled with the least possible loss of time and the greatest safety?

In brief, the method used in our army consists in making three subcutaneous injections, at ten-day intervals, of a killed culture of *B. typhosus*. The vaccine is prepared in the laboratory of the Army Medical School at Washington, D. C., and is sent out in 1 c.c., 5 c.c. and 10 c.c. sealed ampoules, the standard content being 1,000,000,000 dead bacilli per cubic centimeter. The first dose is 0.5 c.c. and the second and third doses 1 c.c. each.

The vaccination of an entire brigade would appear at first sight to be a rather stupendous task, and, as hypodermics are usually given, would indeed be such; but the method about to be described, which is the result of facing just such a proposition, has made possible the administration of over 4,000 doses without a single infected arm, and, with two officers working, at the rate of 5 doses per minute.

The principal factors to be considered, then, since the vaccine is standardized and sterile, are the preparation of the subject's arm (experience having shown that [illegible]ers the middle of the posterolateral aspect of the arm [illegible]on of the most advantageous point), and the manipulati[illegible]d with syringe and needle. Several syringes were tri[illegible] varying results. In general it was clearly demon[illegible]strat[illegible] that any syringe which depended on a rubber or [illegible] washer for a tight connection between needle an[illegible] was sure to give trouble and to be short-lived. The best syringe is one with a plain, ground nipple on the barrel, to fit which the bases of the needles are ground. The needles will then stand repeated boiling and still make a tight joint.

It has been suggested that simple plunging of the needle into boiling water or strong solution of phenol or formaldehyd solution is sufficient sterilization; but it is doubtful if the author of such a suggestion would relish being the next man inoculated with that needle after it had been used on a syphilitic. So, in view of the questionable cases bound to appear, each needle was disconnected from the syringe and boiled, a freshly sterilized needle being used on each case.

Records of each case are kept on cards furnished by the Surgeon-General's office, and for this purpose a sergeant is stationed at a desk just within the door by which the men enter the vaccination room. Coat-racks are provided in the hall. The men enter by organizations in as nearly alphabetical order as possible, each with his left arm bare, exposing the lower two thirds of the arm. The necessary data is given to the sergeant as each man enters the "scrub-up" line. Here at the first table the arm is scrubbed with green soap and warm water, rinsed, and the subject passes on to the second table where a second man washes the previously scrubbed area with a 1 to 1,000 solution of mercuric chlorid; he then advances to a third table where the field is rubbed with 95 per cent. alcohol, after which he comes to the officer who is to vaccinate him. This may seem like needless caution, but a glance at the water after a few arms have been washed would prove ample justification for the first step, while the fact that men coming from stables and police work of various kinds, without any preparation whatever, experience no bad results, would indicate its thoroughness.

When the subject reaches the medical officer, the arm is grasped between the thumb and forefinger of the left hand to steady it and pinch the skin taut, while the needle is plunged downward and slightly forward, nearly parallel with the surface of the arm, into the subcutaneous fat. The injection is given with moderate rapidity and the needle quickly withdrawn. The needle puncture is then touched with a glass rod moistened in pure trikresol and the man leaves by another door. The trikresol dries in a few seconds after which the clothing may be replaced.

The use of trikresol in this manner has been very valuable, not only in cauterizing the needle tract, but the slight burn it leaves marks the site of a previous inoculation and prevents the administration of two doses the same day; for in spite of all directions, some men, knowing they must take three doses, will get back in line for another dose. Thus no difficulty is experienced, even with the short-lived memory of colored troopers; for trikresol leaves a white spot for several weeks, and it is impossible to mistake the number of doses received.

The cleaning-up process is conducted in a line and may be as rapid as desirable; the greatest time being consumed in the filling of the syringe and the maintenance of surgical technic regarding the needles. As was stated before, each needle is boiled and for this purpose a small evaporating dish of water containing a little soda bicarbonate is kept boiling over a gasoline torch. An assistant picks up the needles from the table after they are used and drops them in the water to boil, after which they are removed with a sterile eight-inch Kelly clamp and placed point down in the needle-holder. To secure a fresh needle, with the type of syringe described above, it is necessary for the surgeon only to insert the nipple of the syringe into the base of one of the needles in the holder, give it a slight twist and pull it out. It is well, after thus obtaining the needle, to set it firmly on the syringe by grasping the base (which is winged for the purpose) between the fingers and giving an additional twist. In this manner the inside of the base of the needle, its point and shaft and the outside of the nipple of the syringe can in no way become infected. The syringes are of course boiled to start with.

The needle-holder is steam-sterilized in a towel or thoroughly flamed and placed on a sterile towel. Its capacity is such that two surgeons may have sterile needles available at all times and still allow at least one minute for boiling after use. It consists of a sheet of heavily tinned iron so bent that it forms the bottom and sides of a box 10 inches long, 1½ inches wide and 2 inches deep. In the bottom are punched twelve holes about 3/16 inch in diameter, the burr directed inward. It is placed bottom up on the towel and thus furnishes twelve receptacles for needles large enough so that the point may be easily inserted, but too small to pass the base. The burr being directly downward makes the holes sloping enough on the edges so that needles do not catch.

The needle-holder, as before stated, is sterilized and the needles as they are boiled are removed from the water with the boiled clamp and dropped point down in the holes; the bases, projecting above the surface, are readily accessible without the necessity of handling. Sixteen needles will run two surgeons constantly; eight can be in the holder while four are boiling and four waiting to be boiled.

The vaccine ampoules are kept in a 1 to 500 mercuric chlorid solution, removed and dried as needed, and, after shaking, scratched with a file and broken at the neck; the sterile needle is then inserted into the ampoule and the syringe filled. A little practice is necessary to hit the opening in the ampoule every time with a needle, and several needles will be soiled till this practice is acquired; but the use of the vaccine from the original container eliminates one source of infection, while the small opening minimizes dust contamination, which is a factor where so many persons are constantly moving.

By means of the above equipment, two medical officers, assisted by four men, and one non-commissioned officer in charge of records, have been able to maintain an average of between four and five doses to the minute for an hour or more, and while it may seem elaborate and require considerable help, it is in reality a time-saver for both the subjects and the medical staff. At all events it has made the vaccination of from 150 to 300 men (a not unusual daily occurrence) a mere incident instead of a rather formidable task.

In view of the marked interest taken in antityphoid vaccination by civilians in the neighborhood of Fort D. A. Russell, it is safe to prophesy that the time is not far off when civil practitioners will be confronted with the problem of wholesale vaccination against typhoid in schools, etc.

It is hoped that the procedure may not fall into disrepute on account of infections due to the sacrifice of good technic for speed, and that the preceding paragraphs, in which the methods described apparently combines both technic and speed, may contain some useful suggestions.

I wish to acknowledge my indebtedness to Major George A. Skinner, Medical Corps, U. S. A., and to Captain Percy L. Jones, Medical Corps, U. S. A., for invaluable assistance in the working out of this system and the preparation of this article.

THE PREVENTION OF INDUSTRIAL PHOSPHORUS POISONING *

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This paper is based on supervision, extending over two and a half years, of the hygiene of employees in a large match factory, and observation before and during that time of several cases of necrosis of the jaws from various sources.

The subject may at first sight appear to be of interest only to manufacturers and those interested in labor conditions, but it has been recently so much before the general public in newspapers and magazines, and concerns an article of such universal use, that it is deserving of some attention by medical men.

The pathology of phosphorus necrosis of the jaws is not fully understood, but that this is a very common effect of chronic phosphorus poisoning is well known. Whether the result is an expression of the general toxemia sometimes present in these cases, the poison being derived from the blood after absorption into the system, or whether it gains direct entrance through local lesions in the mouth, is still unsettled. The evidence tends to show that both factors may be present in a few cases, though my observation is that the disease (necrosis) as a general rule may be purely local in origin, and that the poison gains entrance through local points of lowered resistance in the mouth, such as decay of the teeth involving the root canals, pyorrhea alveolaris, etc.

It is well established that the white or yellow phosphorus alone is poisonous, and for that reason legislation has been passed in many European countries, including Great Britain, forbidding its use in the manufacture of matches. In these countries the non-poisonous, red, amorphous phosphorus, and the sesquisulphid of phosphorus are used. The red phosphorus is employed in the manufacture of safety matches, which will strike practically only on the box, while matches made from the sesquisulphid strike anywhere. Neither of these forms of match is as satisfactory to the general American public as the common yellow phosphorus parlor match at present on the market.

Federal and state legislation is now being proposed against the manufacture of yellow phosphorus matches in this country, much stress being laid on the danger to employees in factories making them; and it is undoubtedly true that conditions in some factories justify these measures. Mr. John B. Andrews, Secretary of the American Association for Labor Legislation, recently conducted an investigation of match factories in the United States, and reported his results to the Department of Commerce and Labor. The conclusions he reached were on the whole unfavorable to the continuance of the use of white or yellow phosphorus in the manufacture of matches. Newspapers and medical journals in editorials have taken up the cry and unanimously condemn the yellow phosphorus match, without knowing all the facts, and without fully realizing the economic and other conditions involved. Safety and sesquisulphid matches, under the present tariff and labor conditions, cannot be produced in this country in competition with foreign manufacturers, and if this legislation is passed without modification, the match companies of the United States, representing a capitalization of $20,000,000, employing about 5,000 persons, and putting forth an annual product amounting to about $15,000,000, will be driven out of business. The match manufacturers also point out that other trades, such as those involving the use of lead, are more dangerous to employees than the manufacture of matches. These arguments, however, do not justify the use of poisonous phosphorus when there is a non-poisonous substitute, unless the risk to workers can be eliminated. Can this be done? I believe that, barring absolute carelessness on the part of employees, comparable to playing with dynamite on the part of a miner, yellow phosphorus can be used in the manufacture of matches practically without danger.

SAFETY MEASURES

The following is a brief account of the precautions that have been taken during the past two and a half years by one company. Afterward we shall see the results attained.

The company has on its pay-roll about 120 persons—men, women, boys and girls. There are at the present time forty-four women and girls, the rest being men and boys. There are three main departments: (1) the machine room, where the match sticks are cut and dipped by machinery, employing thirty-five men and boys; (2) the filling room, where the matches are packed into the boxes, chiefly by hand, employing forty-forty women and girls, and twenty-two boys; (3) the general department, which includes the chemical room, the saw and planing mill, the printing and box-making rooms, and the lumber-yard.

General Precautions.—The factory is roomy, and is provided with thorough ventilation, whereby there is a complete change of air every four minutes, and the phosphorus fumes are drawn out by air pumps placed directly over the working places. Lunch rooms, apart from the working rooms, are provided, and employees are obliged to wash their hands before eating. They are instructed about care and cleanliness of the mouth and teeth, and warned against eating or chewing tobacco while at work. An antiseptic mouth-wash is supplied free to all employees. Recently a new match has been introduced, which requires only about one-fifth the amount of phosphorus used in the ordinary match, and machinery will be installed shortly that will greatly reduce the personal handling of the matches.

Special Regulations.—No person is permitted to start work in the factory without a certificate from a local dentist, or until he has been passed on by the special examiner at his monthly visit. A visit is made to the factory by this examiner once a month, at which time the mouths and teeth of all workers are carefully examined, and in addition a survey is made of their general condition as to anemia, hypertrophied tonsils, throat and lung trouble, etc. The results of the examinations are carefully noted on cards. Employees with diseased teeth are required at once to visit a dentist, enforced absence from the factory until the work is completed being left to the judgment of the examiner according to the severity of the lesions found, ranging from simple dental caries to alveolar abscess. It is a general rule not to permit those under treatment for any lesion more serious than simple caries to remain at work. At the next visit the treatment that has been carried out is carefully recorded on the cards. All candidates for employment are obliged to have their mouths and teeth put in order before they are accepted. The aim is to select robust individuals as workers, with sound teeth if possible, and to avoid those with devitalized teeth and those wearing fixed artificial appliances such as crowns and bridges. It is not practicable to make this an absolute rule, and if the individual wearing crowns or bridges be otherwise healthy he is admitted, provided his mouth is kept in good condition. All applicants with diseased tooth-roots beyond repair, are sent to have these extracted, and the wounds caused in their removal must have completely healed before permission is given to work. Persons suffering from simple dental caries are permitted to work during the time they are under the care of the dentist, but those who have devitalized teeth or cavities involving the pulp-chamber must wait until the dental work is completed.

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* Read in the Philadelphia County Medical Society, Feb. 22, 1911.

Monthly inspection, with special attention to the teeth and jaws, keeps the health of the employees right up to the mark, and any development of disease is checked in time. From observation of patients who had worked in the factory for years before the regular examinations were introduced, it is found that the disease may lie dormant for months without any external evidence of its existence, and many of the cases of necrosis arise without pain. The slightest sign of development of an alveolar abscess is sufficient reason for prohibiting the employee from further work until the trouble has subsided. Cases of necrosis due to causes other than phosphorus may of course arise in match workers, and the trouble be attributed to phosphorus. In one case the Wassermann reaction testified to the syphilitic origin of the disease.

RESULTS AND STATISTICS

During the past two and a half years (July, 1908, to December, 1910), 177 persons have been observed for over six months each, divided into departments as follows:

Filling room	97
Machine room	52
General	28
Total	177

Eighty-one of these have worked in the factory for more than two and a half years, that is, before the routine inspections were instituted, as follows:

Filling room	39
Machine room	26
General	16
Total	81

Since the regular monthly examinations have been in force, eight cases of necrosis of the jaws have been found. In one of these the diagnosis of syphilis was confirmed by the Wassermann reaction. Of the other seven, two of the cases began as alveolar abscesses from roots of teeth bearing artificial crowns. Two began from devitalized teeth which had been undergoing treatment for a long period. In another case the man was employed in mixing the chemicals, undoubtedly the most hazardous work in the factory, because it necessitated handling the phosphorus in a concentrated form. Practically every tooth in his mouth had at some time required treatment. The disease rapidly extended and involved the entire lower jaw-bone, resulting finally in the death of the patient. The fatal outcome of this case is to be attributed chiefly to neglect on the part of the patient himself, and his refusal to remain under proper care and to comply with treatment. The man now working in this part of the factory is obliged to have his mouth examined weekly. Two other cases in men employed for nine years occurred after extraction of several badly decayed roots, which they had persistently neglected to have removed. Four of the cases occurred in women working in the filling room, where the matches are packed into boxes by hand. None of these cases can be quoted as an argument against the efficiency of the measures at present in force.

SUMMARY OF CASES

1. Chemical room, male	Lower jaw, fatal
2. Filling room, female	Upper jaw, slight
3. Filling room, female	Upper jaw, moderate
4. Filling room, female	Upper jaw, moderate
5. Filling room, female	Lower jaw, severe
6. Machine room, male	Upper jaw, slight
7. Superintendent, male	Lower jaw, severe

Thus there have been seven cases of true phosphorus necrosis manifesting themselves since the routine examinations were begun, all occurring in persons who had worked at the trade several years before that time. Previously the company had been continually troubled with cases of the disease. (It is interesting to note that in these seven cases, the upper jaw was affected more frequently than the lower, which is contrary to the general teaching.) In Cases 6 and 7 the employees had been with the company nine years, and had worked at the trade longer still without any hygienic regulations. In all of the cases reported the individuals had bad teeth: that is, teeth through which the infection could directly reach the jaw-bone. The disease has developed in no one who has since admission to the factory been subjected to a monthly examination of the mouth and teeth. In no case has the disease developed without a previous dental lesion. At the present time the factory is absolutely free from the disease.

CONCLUSION

The foregoing facts all point to a local infection of the jaw-bone by the phosphorus through diseased teeth as the essential factor in necrosis. In view of these results of observations on 177 persons for periods ranging from six months to two and a half years, it is justifiable to conclude that the measures in operation at the present time are effectual in the prevention of necrosis in persons employed in the manufacture of matches from white phosphorus, and that the substitution of other less satisfactory materials is unnecessary.

1623 Walnut Street.

Conditions Favorable for Cesarean Section.—The mother must be healthy and the child living and at full term. The mother should be under observation for a time beforehand in hospital or nursing home. It must be ascertained by careful examination that Cesarean section is the best available mode of delivery. Any previous handling or examination must be conducted under the strictest antiseptic precautions. The patient must be prepared as is usual for an abdominal section. The usual routine is disinfection of the external genitals and vagina, sterilization of the skin with iodin solution; rubber gloves for the surgeon and all assistants; high median abdominal incision; long swabs packed round the uterus; median incision of the uterus and delivery of the child before bringing the uterus out of the abdomen; thorough cleansing of uterine cavity and making sure of patency of cervix for subsequent drainage; interrupted catgut sutures through the uterine wall, covered in with continuous catgut suture of the peritoneal edges of uterine wound; stitching of the abdominal wound as far as possible in the usual layers, with supporting through and through silkworm-gut sutures.—A. W. Russell, in the *Practitioner*.

AN EFFICIENT AND TIME-SAVING METHOD OF TYING THE SQUARE KNOT

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The time consumed in tying sutures and ligatures during many surgical operations is too great in proportion to the time taken to do the rest of the work. The circumstances under which ligatures must be tied often render the work most difficult and unsafe when done in many of the ordinary ways. The very fine ligature material often used, gloved fingers covered with blood and other fluids, deep and small cavities, the short time one has at command, and the great importance of the security of the knot change a very simple task into one of great moment.

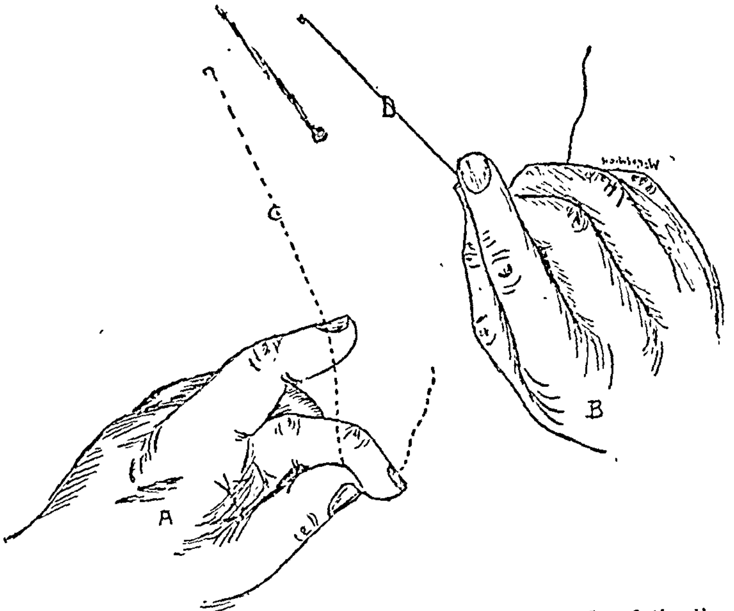

Fig. 1.—Hands (A, left; B, right) grasping the ends of the ligature, ready to make the knot.

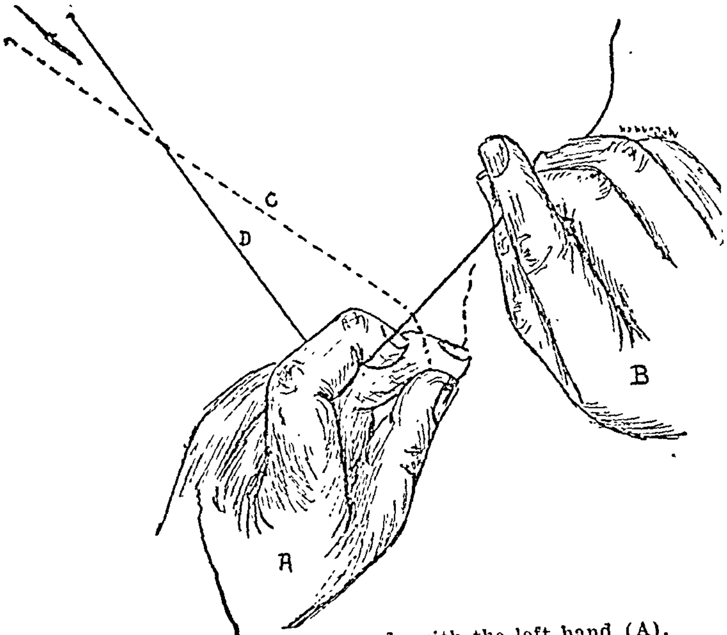

Fig. 2.—First movement, made with the left hand (A).

A knot to be of the greatest value must be one which will not slip or cut the ligature while being tied; it must be simple, requiring few and uncomplicated movements to produce it. It must be made in such a manner that both ends of the ligature are held in the grasp of the fingers while the knot is being tied. It should be tied with one hand. With these important facts in mind we devised the method here described for tying that best of knots, the square or reef knot.

The accompanying drawings were made while the author posed to show each step. To enable the reader to follow each detail, the hands are represented as his own hands, and not as those of some one else whom he is watching.

The left hand (Fig. 1 A) grasps the left end (C) of the ligature between the thumb and the middle finger. The ligature (C) passes over the index finger. The right hand (B) grasps the right end (D) of the ligature. This grip is constant throughout the process of tying the knot. In rapid work the right hand is moved slightly from right to left. The index finger of the left hand is then hooked (Fig. 2) over the end of the ligature (D). The left end of the ligature (C) rolls off of the left index finger. This finger is now further flexed, causing the left end of the ligature (C) to rest on the nail of the same finger. The left index finger is then extended (Fig. 3) and ready to pull C through the loop in D (Fig. 4). The first half of the knot is then tightened (Fig. 5). The middle finger of the left hand will be on the left side of C when the hands are lifted into position over the incision (E).

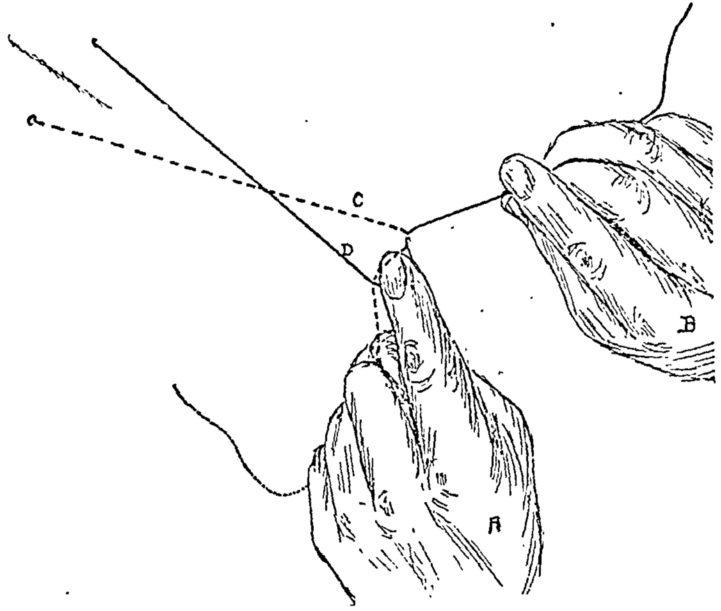

Fig. 3.—The index finger of the left hand (A) making the loop.

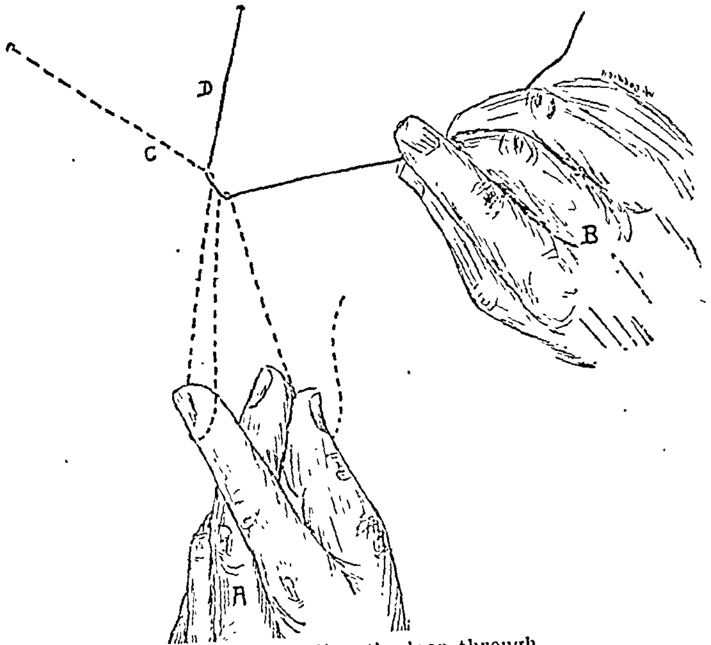

Fig. 4.—Pulling the loop through.

In the second step the thumb and index finger of the left hand hold the left end of the ligature (C), and the left middle finger is hooked under D. By first flexing and then extending this finger C is again hooked through D, and the knot is finished (Figs. 6 and 7).

There is thus produced a square knot which has one turn in either half. This is the best knot for tying ordinary vessels as two turns in one half prevents the ligature from being drawn down to the vessel. The larger the ligature used, and the smaller the vessel to be tied, the greater will be the error by making two turns in the first half of the knot. This knot can be produced equally as well by either hand. If it is desired to have two turns of the ligature in either half of the knot, the same principles can be utilized. All that is necessary is to employ both the left and the right hands simultaneously. The left hand makes the first part of the knot using the index finger while the right hand makes the second part using the middle finger. This will produce the first half of a knot with two turns in it. Now, if the same steps are taken, only in this instance the index finger of the right hand and the middle finger of the left hand are used, the second half of the knot will be made. Each end of the ligature remains in the hand in which it was held in the beginning of the process. It can be produced almost as quickly as the one which has only the single turn in either half.

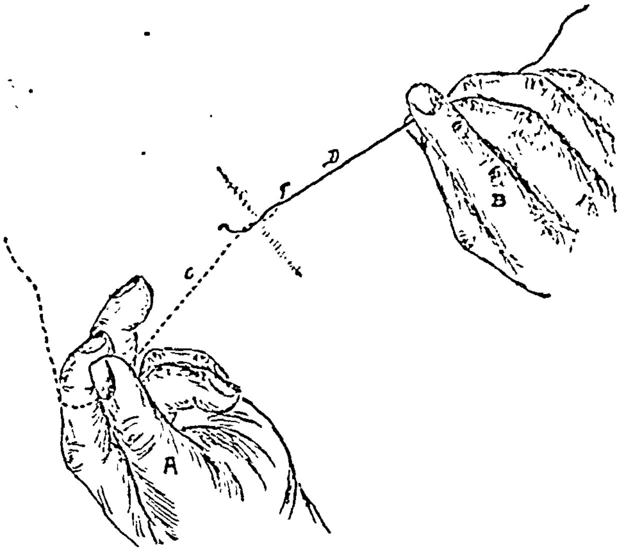

Fig. 5.—First half of knot completed.

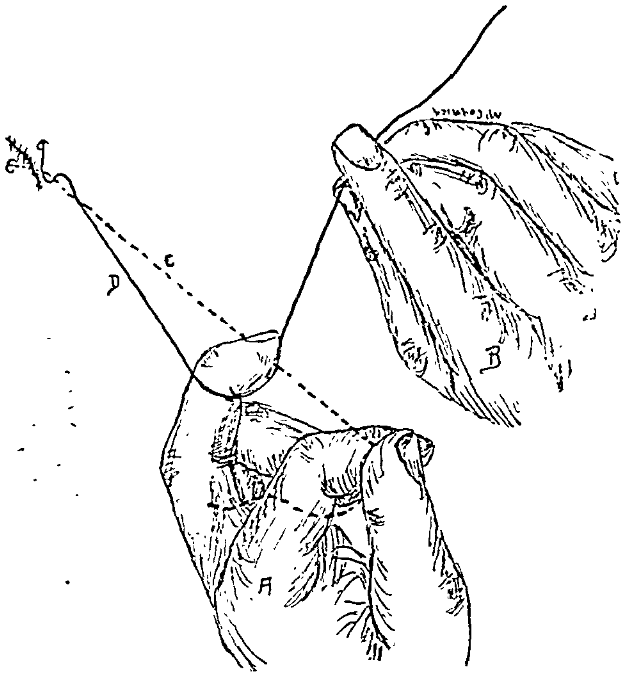

Fig. 6.—The middle finger of the left hand ready to make the loop for the second knot.

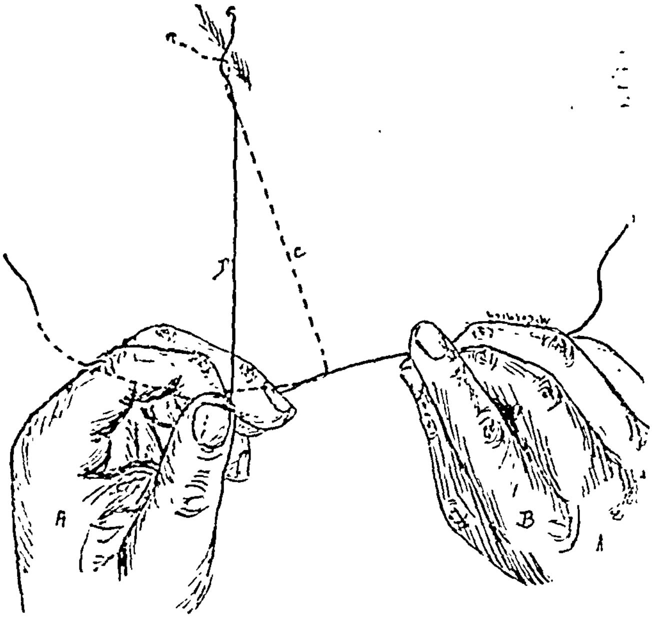

Fig. 7.—The loop made and the knot all but tied.

It should be borne in mind that where there are two turns in the first half of a knot there should also be two in the second, for if there be two in the first part and only one in the second there will be loosening of the first part when the second part is drawn tightly. This is especially true when tying stiff chromic or heavy plain catgut.

1820 Sutter Street.

"INNOCENT" GALL-STONES A MYTH

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Ten years ago we heard a great deal about "innocent gall-stones," which meant that gall-stones existed without symptoms and that their presence was not suspected until post-mortem examination brought them to light. We cannot now escape the conviction that the gall-stones did cause symptoms and that we as diagnosticians, and not the gall-stones, were "innocent."

In the early history of our knowledge concerning gall-stone disease, the diagnosis was not often made until secondary complications and infections had brought about marked local signs and symptoms, or until Nature hung out the yellow flag of jaundice. The mysteries of the disease have, however, been gradually dispelled by operative interference, which has given us pathologic information of the early stages.

It has been stated by good authorities, Naunyn,[1] and others, that gall-stones are present in 10 per cent. of the human race, and this conclusion has apparently been substantiated by the post-mortem material obtained from large hospitals, old ladies' homes, almshouses, etc., but it is quite certain that the illness or disability which placed these people in the hospitals, or disabled them the extent of *becoming a charge* on the community, were in themselves of a nature to bring about gall-stones or to be caused by such disease. It would be idle to estimate, as has been done, that there are sixty million *Germans and that six million*, or 10 per cent. of them, have gall-stone disease. Obviously the premises on which any such computation is based are incorrect.

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[1] Naunyn: Keen's Surgery, 1910, p. 1006.

Hale White[2] found that, in twenty-five years in Guy's Hospital, there had been 11,333 *post-mortem examinations* of adult subjects, and that just 333, or 3 per cent. of them had had gall-stones. *That this percentage is in* excess of the truth if applied to the population at large seems fairly probable, as again, these adults were not the average "well," but the average "sick." It is more probable that one-half of 1 per cent. would be a fair estimate of the frequency of gall-stones in individuals of all ages, although evidence at hand shows that 5 to 8 per cent. of women and 2 to 4 per cent. of men have gall-stones after the age of 50. From Jan. 1, 1901, to Dec. 31, 1910, a period of ten years, 1,244 women were operated on in St. Mary's Hospital, Rochester, Minnesota (C. H. and W. J. Mayo), for uterine myomata. Of these, ninety-two or 7.1 per cent. had gall-stones.

As regards the presence of gall-stones without symptoms: The symptoms may not be recognized as coming from gall-stones, but if gall-stones are accidentally found during the course of operation for other causes, and the history is retaken in the light of these findings, it will usually be found that symptoms were present but were not differentiated from the symptoms of the disease for which the original operation was undertaken. I have been impressed with this fact on finding undiagnosed gall-stones in operating on women for pelvic trouble. After the recovery of the patient I have nearly always been able to elicit a satisfactory history.

The hypothesis of Lartigau[3] as to the bacterial causation of gall-stones is *probably correct, namely, that the* attenuated infection which seems to be necessary to their formation comes from *infected bile, due to bacteria* which have been carried to the liver through the portal circulation, which were not completely destroyed. That this passage of bacteria through the liver occurs just as certain bacteria pass through the kidney, has been demonstrated. The necessary degree of attenuation of the bacteria has been difficult to reproduce experimentally, and experimental gall-stones therefore have been but rarely produced.

The more common bacterial agents are derived from the colon and allied groups, especially the bacillus of typhoid. Admitting that, in healthy persons, the bile is sterile, in the various intestinal diseases such as typhoid, ileocolitis, etc., an excessive *number of colon* and similar bacteria are carried to the liver through the portal circulation, and experimental work shows that, under such circumstances, these bacteria may be isolated from the bile.

Adami[4] has pointed out that the pigmented *areas in the liver are* derived from the pigments of destroyed bacteria, and in his contribution to the physiology and pathology of the liver, gives many interesting facts in this connection.

It is possible that in some instances an *ascending* infection through the common duct *from the duodenum* to the gall-bladder may cause gall-stones, but we should remember that there is a *constant stream of bile and* pancreatic juice toward the duodenum which interferes mechanically *with* bacterial invasion, and again, as Adami and Cushing[5] point out, the content of the duodenum is relatively free from bacteria. One must also admit the possibility of bacterial invasion of the gall-bladder by way of the hepatic artery or through the lymphatics; but this is equally difficult to prove or disprove.

Gall-stones are originally formed in the gall-bladder, *although later in the disease*, because of obstruction and infection in the common and hepatic ducts, secondary *stones may form in the liver ducts*; but I have never seen hepatic duct stones without evidence that the original *disease had its source in an infection of the gall-bladder or common duct*, and the common duct involvement was almost always secondary to the gall-bladder disease.

The *symptoms of gall-stones* depend on the location *of the stones*, and here the anatomy of the gall-bladder plays an important part. The cystic duct is not continuous with the neck of the gall-bladder, but is elevated *on its inner side*; the neck forms a little pouch which overlaps the duct on its outer surface. It is in this situation, the so-called "pelvis" of the gall-bladder, that *stones are so often impacted*.

It has been a matter of speculation why the gall-*bladder, when filled* with pus and acutely infective material, should not produce more serious constitutional *disturbances. The explanation lies in the fact that the gall-bladder has no* lymphatic glands and very few lymphatic channels; therefore it has not the possibility of ready absorption, and its elastic tissue permits such *speedy distention that* the septic material is not under *sufficient tension* to force the infection into the circulation. *By the time the tension has become great the* lymphatic channels are blocked with inflammatory products and a thick leukocyte sheet protects the gall-*bladder*, as is shown by the great thickening of its walls. When stones in the common duct cause cholangeitis, we *promptly get extreme symptoms, often aguish in character*, due to the relative abundance of lymphatics along the cystic and common ducts and in the fissure of the liver; the temperature often running up to 103 and 105 F. for short periods of time. This sudden elevation of *temperature is usually* accompanied by colic and more or less jaundice, although in the quiescent period about 30 per cent. of cases of stone in the common duct will have little or no jaundice. Movable stones in the cystic duct, with a contracted gall-bladder, will cause intermittent symptoms of the same type as those accompanying common duct stones, but without the jaundice.

Older observers developed the natural history of gall-stone disease from the post-mortem pathology, which was obtained after the ravages of terminal infections and secondary *complications* had grossly changed the conditions which existed during life. The newer or physiologic method of study is based on an investigation of the *early departure* from health, and brings up the question, What is the purpose of the gall-bladder? In times past we have been ready to assert that it was a storehouse for bile, but there is as much bile secreted in twenty-four hours as there is urine; and of what avail would be a storage capacity of one ounce, which is the capacity of the normal gall-bladder? If the conjecture that the gall-bladder is a storehouse for bile were true, *it should have some mechanism* to force the bile out at proper intervals, but no one has ever seen the gall-bladder contract. The muscles in its walls are very scanty, not to be compared to the muscle in the wall of the stomach or the urinary bladder. On the contrary, the gall-bladder is composed largely of elastic tissue and it seems most reasonable to suppose that its function is to take the pressure off the common and hepatic ducts temporarily, and also from the ducts of the pancreas, whenever the necessity arises. Since neither the pancreatic nor the biliary ducts have valves, they cannot protect themselves from abnormal pressure if for any reason the bile and pancreatic juices should not escape readily through the papillæ of the common ducts.

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[2] Hale White: Guy's Hospital Report, xlix.

[3] Lartigau: Tr. New York Acad. Med., 1902.

[4] Adami: Cirrhosis, Sajous Annual, 1898.

[5] Cushing: In Robson and Moynihan's Diseases of the Stomach and Their Surgical Treatment, 1904.

The ampulla of Vater is a small chamber in which the biliary and pancreatic secretions mix, and it may be said to resemble the carbureter of a gasoline engine. If the secretions do not escape readily into the duodenum, the back pressure may force the secretion of one organ into the ducts of the other with disastrous consequences.

Opie[5] has shown experimentally, and Halsted[6] has shown clinically, that pure bile injected into the pancreatic ducts will produce acute and usually fatal pancreatitis. In some of our cases of secondary operation at St. Mary's Hospital, in which the gall-bladder had been previously removed, we have observed that dilatation of the stump of the gall-bladder and cystic duct had taken place and that the common duct was almost uniformly dilated; evidently compensatory to the removal of the pressure-reducing gall-bladder.

A second function of the gall-bladder is the production of mucus, shown by the fistulas which follow the destruction of the cystic duct. When the bile passes into the gall-bladder it mixes with the contained mucus. If for any reason the ready escape of the bile into the duodenum is prevented, the mixture of bile and mucus (being subjected to greater pressure in the elastic gall-bladder than the pure bile in the liver ducts) fills the common duct. Therefore, if the contents of the common duct were forced into the pancreatic ducts it would be a mixture of bile and mucus, and not pure bile. Flexner[8] showed that when bile was mixed with mucus, experimentally, it did not produce acute pancreatitis when injected into the pancreatic ducts, but rather the chronic type of pancreatitis, if any harm at all resulted.

In studying the manifestations and complications of gall-stones, I have been impressed with the fact that 86 per cent. of all of the cases of pancreatic disease which we have seen at operation have been complicated with gall-stones. Seven per cent. of all patients with gall-stones in the gall-bladder operated on have had pancreatitis in some form, and in 27 per cent. of cases of stone in the common duct, marked pancreatitis was present. Courvoisier's[9] law holds good, that in 84 per cent. of cases of stone in the common duct the gall-bladder is contracted and practically functionless. We find pancreatic complications four times more frequent in cases of common duct stones than in cases in which the stones are still in the gall-bladder. That the gall-bladder is important as a means of protection, especially to the pancreas, is evident, and is a strong argument against its unnecessary removal.

Gall-stone disease is found to be much more frequent in women than in men. In 4,000 operations which we have performed on the gall-bladder and biliary passages (Feb. 25, 1911, C. H. and W. J. Mayo), 3,075 were in women, and 925 were in men, with an average operative mortality of 2.75 per cent. Eleven per cent. of the total number of deaths occurred in the cancer cases. That there is some cause for the phenomenon which relates to sex, and which cannot be explained by habits, diet, mode of living, etc., seems assured. We (the staff of St. Mary's) have operated on but 3 male patients for gall-stones who were under 20 years of age, while we have operated on 38 females under 20 years of age.

Ninety per cent. of married women who have gall-stones have borne children, and 90 per cent. of these women identify the beginning of the symptoms with some particular pregnancy. The liver of the female should, potentially, be larger than that of a male, since it must functionate for both mother and child. Strange to say, the weight of the female liver is relatively less than that of the male liver, being one fortieth of the body weight, while that of the male is one thirty-sixth of the body weight (Cunningham[10]).

Quiescent gall-stones often become active during pregnancy, and in a number of instances we have been obliged to operate for the relief of rapidly recurring colics, obstruction with infection, or to remove stones which had been forced down into the common duct during the pregnant state. Recovery was always speedy, and in no cases did the operation cause the spontaneous termination of the pregnancy.

The colic of simple gall-stone disease is usually most intense in the epigastrium, passing through to the back, sometimes to the right and occasionally to the left, but seldom radiating below the umbilicus. Spontaneous relief is usually accompanied by a feeling of *movement* of gas or vomiting, and the vomitus more often contains pure bile than does the material vomited in cases which might be mistaken for gall-stone disease. When the pain and tenderness passes into the region of the gall-bladder it is an indication of changes in the wall of the organ, and from this time on the patient does not secure the complete relief between colics which occurred in the earlier stages of the disease, but very often becomes a victim to dyspepsia, indigestion and stomach distress. This is so true that every patient with chronic gastric distress should be questioned intelligently in order to obtain an early history of gall-stone colics, since this information, having apparently no connection with the present symptoms, might easily escape the patient's mind.

Gall-stone disease sometimes causes serious circulatory disturbances. Endocarditis is one of the results, and while it occurs but rarely, it appears to be of a specific type, the development of the heart lesion being coincident with a gall-stone attack; and each exacerbation of the gall-stone disease is accompanied by an increase of the cardiac symptoms. We have operated on some patients with the heart in such condition as to render an operation or even an anesthetic a serious procedure, but the removal of the gall-stones and drainage of the gall-bladder has usually relieved the patient and stopped further cardiac damage, although the heart remained in a crippled condition.

While stones are the most common cause of cholecystitis, in many instances inflammation of the gall-bladder is not accompanied by stones, but nevertheless the patient requires operation for relief. The various forms of cholecystitis have been considered pathologically by MacCarty.[11] One of the fairly common varieties the non-calculous cholecystitis is the so-called "strawberry gall-bladder," in which the mucous membrane has the appearance of a ripe strawberry.

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[6] Opie: Diseases of the Pancreas, 1903, p. 30.
[7] Halsted: Bull. Johns Hopkins Hosp., 1901, xli.
[8] Flexner: Contributions to Medicine Dedicated to William H. Welch, 1901.
[9] Courvoisier: Pathologie und Chirurgie der Gallenwegen, 1890.
[10] Cunningham: Anatomy, Edition 3, 1909.
[11] MacCarty: Ann. Surg., May, 1910.

Cholecystitis without stones is usually accompanied by habitual tenderness in the region of the gall-bladder. As a rule, colic is not a prominent symptom, and if present is not so severe in character as that accompanying gall-stones. There is often a mild constitutional disturbance, and in some instances, for months at a time, there will be a slight elevation of evening temperature (99 to 100 F.), but without marked loss of flesh; the patient complaining of lassitude and other symptoms of a chronic mild toxemia.

Non-calculous cholecystitis occurs in several forms; the two most frequent are the following: 1. The distended thin-walled gall-bladder contains several ounces of colon-infected bile, often with a foul odor. 2. The wall of the gall-bladder is thickened and white, often adherent and contains a thick, tarry material. In both of these forms the lymph-glands along the common ducts are enlarged. In one of our cases of cholecystitis of long standing (twenty years or more) these enlarged glands had become calcareous, producing sufficient pressure on the common duct to cause chronic jaundice.

Complications were found in more than two-thirds of the patients on whom we operated for gall-stones. Stones were found in the common duct in 492 cases, while serious complications involving the liver, duodenum, transverse colon, etc., were the rule. Carcinoma was found associated with gall-stones in 85 cases (2.25 per cent.). We have removed a number of gall-bladders for carcinoma, and in several instances have excised a piece of the adjacent liver. In cases in which the carcinomatous condition of the gall-bladder was sufficiently advanced to diagnose at the time of operation, the patients did not survive one year, but in a number of cases an early carcinoma was removed accidentally, so to speak, in removing thick-walled functionless gall-bladders, and five of these patients are alive and well at periods of from two to six years after operation.

Gall-stones are foreign bodies. Why delay operating until complications occur? In our experience simple operation for uncomplicated gall-stones has had a mortality of less than 0.5 per cent., and this might be called accidental, since it was due to the condition of the patient, rather than to the operation.

Early operation is relatively safe and the gall-bladder may be saved in a condition for future function. Fatalities can be traced in almost every instance to delay. That temporary palliation can be procured with non-operative measures cannot be denied (Carlsbad, etc.), but the cure of the patient can only be brought about by surgical measures.

In this connection may be noted the wide difference
of opinion between the British and American observers,
on the one hand, who urge early operation, and those
continental observers on the other hand, who advocate
the lay in operation. One of the most prominent of the
bacteriinental surgeons draws conclusions which may be
pathologyzed as follows: 1. Stones in the gall-bladder do
this connecte operation until they have produced marked
It is poss, the wall of the gall-bladder, i. e., formation
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to the gall-bladdor gall-stone disease. 3. The ideal opera-
remember that tof the gall-bladder. 4. Drainage of the
pancreatic juice till usually be necessary. In reply the
y operation would say: 1. In operating

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2. Hale White: changes are manifest the danger is mini-
3. Lartigau: Tr mortality is small. 2. In operating early
4 Adami: Cirrh

an incision longer than is necessary to introduce the hand for exploration is not often required, and prolonged convalescence and the danger of hernia is avoided. 3. In early operations it is not necessary to remove the gall-bladder, and this valuable organ is saved. 4. Early operation relieves the patient before deep-seated infections occur which necessitate drainage of the liver ducts.

HOOKWORM DISEASE

PREVALENCE, HARMFUL RESULTS AND TREATMENT *

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GOLDSBORO, N. C.

PREVALENCE OF HOOKWORM DISEASE

Hookworm disease prevails in tropical and semi-tropical regions. Its distribution is now being studied in many parts of the world, and especially in our South; in every southern state a number of physicians are spending their entire time collecting data on its prevalence, and endeavoring as best they may to effect its eradication. Already it is known that the disease exists in Virginia on the Potomac River, in Florida, in Texas and in the intervening states, including North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas and Tennessee.

The following results of investigations which have been made will give some idea of the degree of infection among our people. Chamberlin in 1909 examined a number of southern recruits and found 60 per cent. of them infected. Later Siler in examining 105 recruits found ninety-three infected, which is 88.5 per cent. In North Carolina during the past summer the following examinations have been made with results as indicated (Figures collected by Dr. J. A. Ferrell, director of the North Carolina campaign):

	Examined, No.	Infected, Per Cent.
First regiment North Carolina soldiers	372	36
Second regiment, North Carolina soldiers	366	58
Third regiment North Carolina soldiers	149	32
Coast artillery North Carolina soldiers	218	30
N. C. A. and M. College (colored)	93	16
Presbyterian Orphanage, Barium Springs, N. C.	165	40

Odd Fellows' Orphanage, Goldsboro, N. C.:

	Examined, No.	Infected, No.	Infected, Per Cent.
Total	96	52	54
Girls	51	27	53
Boys	45	25	55
Counties represented	27	21	77

Methodist Orphanage, Raleigh, N. C.:

	Examined, No.	Infected, No.	Infected, Per Cent.
Boys	48	36	75
Girls	83	44	53
Total	131	80	61

Masonic Orphanage (colored), Oxford, N. C.:

	Examined, No.	Infected, No.	Infected, Per Cent.	Ascaris Present
Boys	50	6	12	35
Girls	58	7	12	38
Total	108	13	12	77

The children here, as in the other orphanages, range in age from 6 to 18 years.

Dr. B. W. Page, assistant to the Secretary for Hookworm Disease to North Carolina Board of Health, had 394 children at the Baptist Orphanage examined and found 38 per cent. of them infected. Dr. C. L. Pridgen, is also an assistant in the North Carolina Hookworm Campaign, working in the western section of the state. His examinations of school children showed the following: Fifty-four specimens from Mitchell and Yancey

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* Read at the medical society meeting of the Fourth District of North Carolina.

counties showed twenty-eight infections with hookworm. and twenty-five with *Ascaris lumbricoides*. Twenty-eight examinations in McDowell County showed twenty-eight infections, or 73 per cent., and in the town of Marion in the same county, 54 per cent. of infection was found in thirty-five examinations.

Serving the North Carolina Hookworm Commission in same capacity as the two physicians last named and working in eastern North Carolina, I found the infection running somewhat higher than in the central and western sections of the state. In the Kinston High School fifty-one were examined; twenty-eight or 55 per cent. of them showed hookworm infection. At Magnolia in Duplin County, seven school children were examined and six were found infected. At Faison, in the same county, twenty-four people were examined whose ages ranged from nine to forty years, and thirteen were found infected. Other schools showed the following:

Wayne County, Eureka,	6 examined,	4 infected, or 66 2/3	per cent.
Wayne County,	21 examined,	19 infected, or 90.5	per cent.
Wayne County,	19 examined,	13 infected, or 68.4	per cent.

Moreover, Dr. K. A. Price, of Hickory, had fifty-six male college students examined and found nine infected. Examinations of school children are now being made in large numbers and the results of these will soon be obtainable. At this time only the figures above given are in my possession. The figures given tend to show that the disease exists in all sections of the state, but that it is more prevalent in the eastern counties. This may be due in part to the fact that the soil is largely sandy and level, factors favoring the propagation of the hookworms; in part to the fact that the negroes, who are regarded as extensive worm-carriers, though they suffer but little from the disease, are more densely settled in the east than in the west, and in part perhaps to the fact that the counties in the tide-water belt have longer and warmer summers than the mountain counties.

Further information on the prevalence of the disease in the state may, it would seem, soon be obtained from our general practitioners. During the first three months of 1910 they sent to the state laboratory only seventy specimens for examination. During the second quarter, which ended June 30, they sent in 486 specimens, and during the three months ending September 30, 1910, they sent in 2,421 specimens. If their interest in the work continues to grow with such rapidity the distribution of the disease may be known to a certainty.

HARMFUL RESULTS

The thorough discussion of the far-reaching harm resulting from hookworm infection would be too lengthy for the present paper. Dr. H. F. Harris, secretary to the Georgia State Board of Health, says: "In no other disease does the victim suffer so long; in no other condition is he for such a period a menace to those about him; in no other malady of such gravity is treatment so rapidly and surely successful." The more immediate results of the disease are of vital importance.

Perhaps the harm produced by the worms will be more easily explained if first a word is given to the characteristics of the worms. They are blood-sucking parasites, varying in length from one-fourth to one-half inch; in numbers they range from less than a hundred to more than four thousand in a single victim of the disease. They inhabit the small intestine and attach themselves by their mouths, which are supplied with powerful muscles, teeth and sucking surfaces, to the mucous membrane. They move from place to place in feeding on the blood they suck from the flesh, each time making a new wound. The loss of blood resulting from their action is of greatest importance. Much blood is drawn directly into the bodies of the worms, but a more important loss perhaps occurs through the minute hemorrhages from the wounds which they make. So great is this latter loss in some instances that the blood in the stool of the victim may be recognized by the naked eye; if it is less, it may be detected by the usual chemical tests. Ordinarily the loss of blood would be somewhat dependent on the number of invading parasites. There are cases, however, in which the number of worms present seems to account only in a remote degree for the symptoms produced. The patient's age, his constitution, his digestive system, and his power to manufacture new blood are points which determine, to some extent, the amount and effect of the loss of blood.

A second harmful result is the poisoned system. The worms are supposed to secrete and inject into the flesh a hemolytic poison, which, moreover, prevents the coagulation of blood in the wounds, from which, therefore, much blood is lost by oozing. Moreover, the excrementitious products from the worms are poisonous, and since the wounds offer points for easy entrance of pathogenic organisms, in many instances the wounds are followed by suppuration, and poisons from such places, when absorbed, increase the general poisoned condition of the patient's system.

In addition to the loss of blood and the poisoning of the system should be mentioned the damage done to the intestine. The numerous bites, together with the poison, give rise to a chronic catarrhal inflammation of the intestine. This impairs digestion and causes tenderness in the epigastric region. To this may be added what is really of sufficient importance for separate consideration. With much denuded and diseased mucosa exposed, disease organisms, particularly tubercle bacilli, and typhoid bacilli, which find entrance into the intestinal canal with food or water, easily pass into the lymphatic or blood-currents and ultimately overwhelm the defenseless victim with the disease they produce.

The secondary changes which result from the hookworms will be best understood by discussing them in connection with the symptoms of the disease. Anemia, with its important effects on all nutritive and metabolic processes, accounts for most of the striking features presented by a hookworm victim, such especially as physical and mental weakness. It also predisposes the person to other diseases and in many instances the ensuing complication is regarded as the primary cause of the death of the person.

For convenience of description I shall classify the disease, according to its harmful results, into four divisions; namely, mild, medium, severe, and very severe.

Mild Cases.—In the mild cases we have, at present, no recognizable symptoms, and they are only diagnosed by the microscope. Though I have found in adults mild digestive disturbances, such as slight reduction of digestive ability, tenderness, pain, and discomfort in the epigastrium, accompanied by nervousness. (This is by no means constant.) Sometimes only a small number of worms are present; again 200 to 300 worms may be present and not produce recognizable symptoms (Dock and Bass).

Medium.—Cases of medium severity have little pallor or have a slightly dirty, yellow tinge of the skin in whites, and a slight pastiness in mulattoes. There is a reduction in the normal amount of perspiration; the appetite is frequently excessive. There may be uneasiness, pain or tenderness in the epigastrium, frequent attacks of meteorism, slight dyspnea on exertion, palpitation of the heart, dizziness, headache, lack of attention to details, and a little stupidity. The muscles are flabby, and weakness and indisposition to labor exists (laziness). The hemoglobin of such persons generally is between 60 per cent. and normal. Joint pains, especially in the sternum, constitute a frequent symptom. The temperature may range from 99 to 101 F.

Severe Cases.—Here all symptoms noted under medium cases are more prominent. The pallor is definite, the mucous membranes are paler than normal, and where the same form a juncture with the skin it often fades away so gradually as to be imperceptible, the skin is quite dry, and sweating is rare. The appetite may be exaggerated or diminished. Nausea is frequent. The tongue is coated and often flabby and enlarged. Tenderness of the epigastrium, with spontaneous pain on gentle pressure at times, is present. (In sixty inspections followed by microscopic examination, this sign has proved positive in every one, being the most constant, most suggestive and most marked of all signs or symptoms.) Breathlessness is easily brought about by the slightest exertion. There is often a hemic murmur of the heart. There may be much pain in the sternum and chest, with a feeling of weakness of the knees and legs. There is much dizziness, especially on sudden changes of position, noise in the ears and frequent headaches. The mental condition is decidedly depressed, and the patient is quite passive to his surroundings, and presents a stupid appearance. The patellar reflex may be either exaggerated or diminished. Patients complain of cold and tingling of the feet, which frequently go to sleep; the muscles are flabby and may be slightly painful; joint pains are so common that a diagnosis of rheumatism is often made. Work is performed with great effort and is deficient in both quality and quantity. In about ten days after ground-itch appears the patient usually develops a sore throat, a slight bronchitis, and a temperature ranging from 99 F. to 102 F. The skin is waxy, tallow or tan color. Edema of the face may be present. The hemoglobin is apt to be between 45 and 70 per cent.

Very Severe Cases.—A case in this stage of the disease may terminate fatally at any time. The skin is tan or tallow-colored. Edema of the feet and ankles alone, or sometimes extreme anasarca may be present. The appetite may be slight or enormous. Nausea and vomiting are frequent. Ascites may be alarming. Diarrhea often alternates with constipation. There is distressing dyspnea on slightest exertion, severe palpitation of the heart, pericordial pain, rapid, weak and compressible pulse, and often dilatation of the heart; marked pulsation of the vessels of the neck; dizziness and tinnitus aurium are extreme; patellar reflex is abolished. In men impotence is an almost invariable symptom, and amenorrhea in women. The intellect is dull and the patient seems confused and stupid. The facial expression is anxious and stupid. There is a tendency to dilatation of the pupil, and blurred vision exists. The urine has a low specific gravity, is abundant in quantity, and usually contains no albumin. The muscles are flabby, sore and painful. Extreme weakness is observed and the patient is incapacitated for labor. There is often irregular fever, with intervals of subnormal temperature.

Acute hookworm disease may occur without previous infection, or an acute attack may supervene on a chronic infection. These acute attacks occur in the spring and summer, and their symptoms vary with the severity of the infection. Should sufficient infection occur, there will be a sore throat, and bronchitis, nausea or vomiting, a chill and diarrhea, epigastric pains or colic, rapid anemia, and elevation of temperature as high as 101 or 102 F. One difference between acute and chronic cases is that the skin is waxy white with severe anemia, whereas in chronic cases, with the same amount of anemia there is a more yellow tinge ("tallow-faced"). Children with acute hookworm disease have not the "pot-belly" present in so many of the chronic, severe cases. In very severe infections, as in Claud A. Smith's experimental case, great swelling occurs on the second and third days. Loose has noticed red lines running up the leg—probably a lymphangitis.

Nervous System.—Insomnia and night terrors are quite common, because of motion of the worms. Somnolence often occurs, and the patient keeps awake with difficulty. Lack of ambition and lassitude are noticeable. After administration of thymol the temperature frequently rises to 102 or 104 F., usually subsiding in twelve hours. I offer the following explanation of this phenomenon: When the thymol comes in contact with the worms they become very active; the thymol causes them to vomit and purge most of their ingested blood (Bass); at the same time they eliminate a large amount of toxin; much blood escapes from their points of attachment. Therefore, if the hookworm toxin acts as a direct poison, and the blood absorption acts as an auto-intoxicant, I feel that a rise in temperature would be accounted for.

QUESTIONS BEARING ON POSSIBLE ADDITIONAL HARMFUL RESULTS

1. May not many cases of neurasthenia and hysteria be attributable to hookworm disease?

2. Could not such perversions, among hookworm patients, as disobedience, profanity, lying, stealing, drinking, forging, and sexual perversions be attributable to hookworm disease, provided recovery followed cure of the hookworms?

3. Is not chlorosis or "green-sickness," in many cases a result of uncinariasis?

4. Is it not probable that a number of cases of defective eyes and ears, and diseased tonsils and adenoids could be attributed to the same cause?

5. Is it not true that many abortions and miscarriages can be attributed to anemia resulting from hookworm disease?

6. Does not observation show that, as Dr. Nicholson of Onslow County says, whereas the average eclampsia with first child in the United States is 1 to 250, in women suffering with hookworm disease the average is 1 to 50.

7. Is it not probable that many women die from shock during labor as a result of hookworm disease?

8. Is it not a fact that, as a result of this disease, many women cannot furnish sufficient milk to nourish their babies?

9. Is it not a fact that hookworm disease is the cause of more amenorrhea, dysmenorrhea, and scanty and irregular menstruations, than any other disease in our South?

10. Is it not a fact that a hookworm patient, pregnant, quite often suffers with a severe dropsy, and often after delivery may run an irregular temperature for some time and fail to react to tonics or quinin?

TREATMENT

External.—Ground-itch in the papular or vesicular stage may be treated with a 5 per cent. salicylic acid suspended in collodion. This usually cuts the attack of ground-itch to one or two days. During the pustular state, the wound should be cleansed and cauterized with silver nitrate and then a dry dressing of 5 per cent. boric acid and zinc oxid ointment applied twice daily.

When great swellings occur hot applications should be used. To allay itching and prevent secondary infection a combination 5 per cent. zinc oxid and salicylic acid ointment applied locally, twice daily, is recommended. It is important to keep the foot bandaged or covered to prevent scratching or rubbing.

Internal.—Treatment should be begun on the fifteenth day from date of the ground-itch and repeated once. The same treatment should be instituted after an attack of ground-itch as if eggs were present in the stools, thus getting rid of the worms before they reach maturity and have done much harm. The stools should be examined at the end of six and twelve weeks from the attack of ground-itch for eggs of any worm that may have escaped previous treatment.

Preliminary.—The first step is to remove the protecting chyme and mucus by a large dose of salts—Rochelle, Epsom or Glauber's—four hours after the last meal. Sodium sulphate dissolves and removes the intestinal mucus best. The drugs used to kill or expel the worms are thymol, betanaphthol and male-fern.

Dose of Thymol.—The dose for children should be in proportion to the size, apparent age, and physical condition. Ashford and King give the following table of doses, to be regulated, in the case of children, rather by size than by actual age.

	Grains.
Under 5 years	7½
5 to 10 years	15
10 to 15 years	30
15 to 20 years	45
20 to 60 years	60
Over 60 years	30 to 45

I have been giving about 2 grains per year up to the age of 30, the same to be administered in two equal doses two hours apart. Unfavorable conditions, such as great weakness, extreme anemia, diarrhea, cardiac depression, pregnancy, and dropsy, require a smaller dose.

Mode of Administration of Thymol.—This should be given in two or three broken doses to prolong its presence in the upper bowel. Because of its tendency to pack together under pressure or in the mucus in the intestine, equal parts of sugar of milk or some other soluble substance should be mixed with it. To prevent its burning of the mouth and throat, it should be given in cachets, wafers, or capsules; it may also be given suspended in either mucilage or syrup of acacia or some simple syrup. The patient should lie on the right side and refrain from drinking much water, to prevent vomiting. After two or three hours another brisk purgative of salts (never castor oil) should be given to prevent its absorption. The patient should remain in bed until the thymol is moved off. Either the bed-pan or the commode should be used in the room to avoid possible fainting.

Diet During Thymol Treatment.—To keep the alimentary canal clean, no food or drink, except water, should be allowed from the time the preparatory purgative is given until the purgative following the thymol has acted well. If the patient is weak or faint, or if the burning in the stomach is excessive, a little warm coffee may be allowed. The diet need not be restricted after several free movements have occurred following the post-thymol purgative, unless there is some special indication. The treatment should be repeated once a week until examination of the stool, washed through a piece of cheese-cloth, shows no worms, or the microscopic examination shows no eggs.

Saturday evening and Sunday is the most convenient time to administer the treatment to working people and school children. The salts purge should be given Saturday evening and thymol begun early Sunday morning. For example, Saturday at 8-9 p. m. sodium sulphate may be given; Sunday at 6 a. m., thymol; Sunday at 8 a. m. thymol again; at 10 a. m., sodium sulphate. Until 4 p. m. the patient should not eat, or drink anything except water, and but little of that.

Caution.—Oils, fats (milk or butter), patent medicines, or beverages containing alcohol should not be allowed during thymol treatment. Thymol may affect the patient in one of three different ways: by intoxication, by irritation of the kidney, and by irritation of the stomach and intestine. The effects of absorbing a large amount of thymol are depression, headache, weakness, dizziness, tinnitus, nausea, unconsciousness, rapid, weak pulse, and sometimes profuse sweating and subnormal temperature (about ½ gr. of thymol is soluble to the ounce of water). The effect of thymol on the gastro-intestinal canal is occasional epigastric pain, nausea and vomiting, and more or less diarrhea. Therefore gastritis, and diarrhea or dysentery are contra-indications. About half a dose should be given to a very weak subject the first time.

Treatment of Toxic Symptoms.—Cardiac stimulants should be given, morphin and atropin, strychnin, digitalin or ergot, subcutaneously, and hot coffe per rectum. Alcoholic stimulation should be avoided. The patient should be kept recumbent. Hot blankets should be applied to the body and a warm water enema used.

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SANITARY CONSIDERATION OF HEALTH RESORTS

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The recommendation of health resorts is frequently expected of physicians who unconsciously assume the risk, little thinking what effects, both good and bad, the individual town or hotel may have on its guests. Convalescents, travellers and vacationists visit the health and summer resorts unsuspecting of any danger or with the confidence that the conditions are as the physician assumes or expects. The mere mention or naming of a resort by a physician is considered a recommendation and a therapeutic direction to be followed as any other therapeutic order. Opinions of resorts must be formed from personal observation, from description by others, or advertisement. There is an avoidance of the whole truth in many advertisements, yet these misstatements or evasions are accepted without question, and serving as the directing force, may ultimately end disastrously to the guests and finally to the resorts.

Had one physician, referring to a western town as a well-known health resort, known its true condition and the possibility of contracting typhoid fever there, he would have pronounced it anything but a health resort.

Up to the present there has been no proper sewerage in the town. The water-supply is obtained from driven wells located within the city limits. The subsoil is badly polluted with sewage which, unless a change is made, must inevitably dangerously pollute the water-supply, thereby causing an epidemic which may be extensive and serious to the victims, besides ruining the reputation of the resort.

There being such a multitude of resorts in each state, and it being impossible to learn of the conditions in the various localities and resorts, there is needed some method by which the desired information may become available. Physicians should know what constitutes safety in a particular resort, and should give recommendation to the safe ones rather than condemnation to the backward or careless places. In consequence of this recognition of the dangers of certain resorts these places, aided by private or official instruction, will learn the value of sanitary conditions, and appreciate that it is necessary in their competition for existence.

Many resorts are ideal, but it is the occasional hotel or town, conducted blindly, without any medical or sanitary supervision, which becomes a risk amounting to a menace. When a resort installs sanitary conditions and maintains an active regard for the health of its patrons it should be publicly recognized as safe. Sanitary conditions imply much more than plumbing fixtures. If the resort furnishes pure water, pure foods, and has eliminated noxious gases, plants and insects, and becomes in no way a distributing station for environmental or infectious diseases, it deserves the recognition and patronage of physicians. In publishing any list of safe and well-equipped establishments there should be no discrimination against the smaller resorts in favor of the larger, stronger and more wealthy places. The resorts should be judged not alone by their financial outlay or advertisements, but by their activity in maintaining true health-giving conditions.

The resorts which are not safe are in such condition more from ignorance than indifference, and from an inability to understand what constitutes lack of sanitation rather than from a disregard for the safety of others. The proprietors of such places need instruction in what constitutes sanitary requirements, what is purity in water and foods, how infection may be transmitted and how to guard against disease. The information is more welcome when presented in a manner to show the influences each objectionable condition can have on the proprietor's family and guests and on his income and prosperity. If an utter disregard for the safety of the patrons is evinced, it may be necessary to use other than suasive measures. Then official threatenings, legal force or publicity of conditions may be judged by some to be required. Such was the opinion of the New York State Department of Health, which considered itself obliged to publish the names of some sixteen resorts in that state, *warning the public of the many dangerous conditions maintained.*

The revolting conditions in a few resorts may be cited: One hotel discharges sewage into a lake only a short distance from its water-supply intake; another hotel takes its water from a small lake which receives the sewage of hundreds of people; ground directly beneath the hotel guests' windows is covered with the overflow from cesspools; in spite of window screens I found many anopheles in my hotel room every morning; a well supplying drinking-water to a hotel is within thirty feet of a privy, another within ten feet; toilet accommodations are notoriously insufficient and out of repair in some hotels; one hotel disposes of its garbage by emptying it along a roadside; a resort town has its water-supply pipe laid in the same trench with its sewer, the outlet of the sewer being within three feet of the intake of the water-pipe in the same stream. The main sewer of one well-known shore resort discharges on its most frequented bathing beach.

These resorts are the exceptions; but it is these exceptions which constitute the dangers and should be eliminated. Other resorts, on the other hand, are equipped with water-filters and sewage disposal plants of the highest efficiency, and take extreme care to preserve the purity of all surroundings and supplies. One actively prohibits the fertilization of fields within five hundred feet of the stream which is its water-supply, and no water from barnyards or even remote privies can enter the stream.

An attempt to collect sanitary data by mail failed, owing to many not replying, many not appreciating the value of details, and other health officers not being versed in the conditions of resorts in their jurisdiction or not being able to judge of safety. One officer declared there was no opportunity of their supply of river water being polluted, "except from towns above this." Another town obtaining water from the lake into which the sewage is discharged declares there is no danger of pollution.

Owing to the neglect of sanitary conditions and the refusal to listen to warnings there have occurred in isolated hotels outbreaks of typhoid which resulted in numerous deaths, public condemnation, loss of prestige and business failure for the hotels.

The sanitary inspection and control of resorts should be one of the duties of the state board of health. For four years the New York State Department of Health has been carrying on activities among its mountain and shore resorts with good effect. The resorts were mostly found in satisfactory condition, but there were occasional evasions of esthetic and sanitary requirements. Of twenty-six resorts in the Raquette and Saranac water-sheds, inspected in 1908, only seven obtained their water-supply at a distance from the resort grounds and away from any possible source of pollution. Two resorts used lake-water; twelve discharged into lake. The pollution of lakes and bathing beaches constitutes a serious danger. Of twenty-four resorts on Long Island, reinspected in 1908, ten failed to comply with the orders to abate nuisances. As a rule the proprietors are willing to make corrections, but are ignorant of what constitutes dangerous conditions. The welfare of the guests at some localities is admirably protected as at Upper Saranac, Richfield Springs and Sylvan Beach. There are many resorts, from Bar Harbor to Pinehurst and Los Angeles, which have spent much money in obtaining pure water.

In maintaining state sanitary control there should be classed as health resorts all towns usually advertised or considered as resorts, hotels used by summer or winter visitors or vacationists, pleasure and recreation resorts, parks and camps, the so-called watering places, the so-called medicinal spring resorts, bathing or watering places patronized by excursionists, and localities or institutions advertised as sanitariums or sanatoriums. All of these places can strictly be classed as sanitariums or sanatoriums, for to them people go with the hope of acquiring or maintaining health. The Travellers' Protective Association recently recommended the enactment of state laws placing all hotels under state inspection and fixing a standard of sanitary efficiency and safety as the principal requirement for license. The adoption of such legislation seems desirable.

Mineral spring resorts should be placed under licensure. A committee of competent and accepted authorities should be delegated to determine the status of these resorts and the medicinal value of their treatment and vended waters. License should be granted only after frequent sanitary inspections, and after the advertised analyses of waters and all advertisements and resort literature comply with the true virtues of the waters as expressed in the opinion of the medical authorities. Misbranding in the advertisements of these and other resorts and hotels is a menace to health, since people place dependence in the resorts without consulting physicians. The widely circulated assertions that certain mineral springs will cure long lists of diseases places these resorts on the same footing with nostrums and exerts a damaging influence on those baths which possess great value in the treatment of certain specific diseases. The misbranding of resorts becomes a crime. The enforcement of truthfulness in the literature and advertisements of all places and objects on which people place dependence for health and life becomes a state's duty. If a resort commits the double crime of wilfully or knowingly deceiving people by *concealing its dangers*, publicity of conditions and public condemnation of that resort would seem to be just.

In cities it is more practical to keep the infected transmitting agents away from the people; but in small resorts or isolated hotels it is more practical to keep the infected people away from the agents which they may infect; as, in cities to keep the infected mosquitoes away from the people; in resorts to keep the infected person screened from the mosquitoes. The controlling influence must be exerted against the infected carrier which is in lesser numbers and more easily isolated, whether it be man or insect, food or dirt, water-supply or sewage.

Too much reliance should not be placed on crude mortality rates when judging the healthfulness of a locality. Only when statistical tables are calculated to consider age groupings and individual susceptibilities then the figures be considered of much value. The general death-rate of a town may be high from a large infant mortality, yet the place be perfectly healthy for visitors. The mortality rates may be low, owing to native insusceptibility, but the danger to visitors great. In a healthy town the rate may be augmented by diseased persons going there for the benefit they may derive. The influence of hospitals within the city or in adjoining cities and the factor of imported or exported cases should be considered, and receive an allowance in the published rate. Some towns, like one large resort, unrightfully glory in a low rate by transporting their patients to hospitals in other cities, or because their transient visitors develop symptoms only after returning to their homes. Large cities are unjustly obliged to bear the burden of including in their rates many cases which have been contracted through the carelessness or ignorance of other localities. Statistical records which are used for comparison should include only those cases which originate within the town. The summer distribution of a town's population throughout the infected areas of the country is the factor, more than any other one, which is accountable for the great rise in the typhoid mortality in the fall. It has been estimated that 22 per cent. of the typhoid cases in the District of Columbia are imported. Ten per cent. of the cases in Philadelphia are imported, the ratio in the fall (1909) being over half. In 1909 of 2,336 cases of typhoid fever 231 were proved to have been imported, twenty-nine of these cases coming from one summer resort. Twenty-eight of the other cases originated in other resorts.

Eliminating the statistical factors of susceptibility and age grouping, some idea of the existing conditions may be gathered from the typhoid rates in the registration area. The general rate for the area for 1907 was 30.3; for 1908, 25.3 per 100,000 population. Colorado, a resort state, was highest with a rate of 47.7 in 1908 (63.7 in 1907). The fact that Pennsylvania's rate of 50.3 in 1907, was reduced to 23.9 in 1909, shows what can be accomplished through the energy and work of a state department of health. Of the registration cities in 1907, the typhoid list was headed by Escanaba, Mich., a lumber town and summer resort, with a record of 220.2 (126.5 in 1908). The notoriously high rate of Pittsburg (130.8 in 1907) was eclipsed by Jacksonville, Fla., with a rate of 155.1, yet the dangers to health of the latter place are rarely mentioned. The excessive rate of Niagara Falls (126.6 in 1907) may fortunately soon be lowered, for in place of furnishing Buffalo's sewage, purified water may soon be supplied from an effective filtration plant. Philadelphia was long called a typhoid-infected center, yet a comparison with cities which people unsuspectingly visit expecting to regain health, will indicate misplaced conviction.

TYPHOID MORTALITY RATES OF RESORT TOWNS

	1907.	1908.		
Escanaba	220.2	126.5	St. Petersburg	80.7
Jacksonville	155.1	104	Havana	39.3
Niagara Falls	126.6	....	Paris	21.7
Key West	109.8	44.4	Montevideo	18.8
Salt Lake City	93.2	47.4	Brussels	17.2
Savannah	77.3	22.5	Rio Janeiro	15.9
Sacramento	76.7	97.8	Vienna	5.1
Denver	67.1	54.8	Berlin	5
San Antonio	66.9	44	Stockholm (1907)	4
Long Branch	69.9	60.6	London (1907)	2
Saratoga Springs	52.9	....		

San Antonio's rate does not indicate the quality of her water, which comes from clean artesian wells far *outside the city*. The recent epidemic at Montreal disclosed the condition of her water, which is taken from the St. Lawrence below the sewer *outfall*.

The malarial mortality rate of the registration cities gives prominence to some conditions and may surprise some health seekers. In 1907 Savannah headed the list with a rate of 111.6 (122.3 in 1908), followed by Memphis and Jacksonville (78.8 in 1907, 58.3 in 1908). The 1908 rate of Charleston was 44.3, while that of New Orleans was but 19.5. It is unfair to judge the health activities of a locality by a mere comparison of rates or by the apparent rapidity of their decline. The conditions with which health officers must contend are variable and in some places almost insurmountable.

Physicians should not be reticent about giving unasked advice, but when opportunity offers should assist hotel proprietors to improve conditions. When the proprietors use such means as are at their command to improve and to maintain health-giving conditions there will be stamped on their resorts a recognition of safety, with the inevitable result of public appreciation, increased prestige, more publicity and more business. The confidence of the public is the chief asset of a resort. It is the forte of sanitarians not to antagonize or to bankrupt, but to instruct, to assist the resort-keepers to install and to maintain resorts in their highest efficiency, and to teach that healthfulness and sanitary safety mean increase of popularity and prosperity.

TRICHINIASIS IN ITALIANS

FOLLOWING THE EATING OF RAW HAM OR "PROSCIUTTO"

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The Italians give much thought to the preparation of their food, palatability being of prime importance, while care in the selection—especially of animal food—seems to be secondary.

I have seen two cases of trichiniasis among Italians in private practice within the past year; and have collected ten other cases from the records of the Boston City Hospital, admitted within the past five years, six of these ten cases being directly traceable to the ingestion of raw ham. These latter cases were among Italians, and the infection was traced to the same source; that is, smoked ham, or "prosciutto." There was one death among the twelve cases.

This raw ham, or prosciutto, was, up to two or three years ago, imported in fairly large amounts, but the recent advance in the cost of food products has made the importation almost prohibitive. The imported ham, however, may be obtained in about every second delicatessen store in the Italian quarter of Boston, and costs about fifty cents per pound. The home-cured or domestic prosciutto is also obtainable for about thirty-five cents per pound, and is cured by the local delicatessen dealers.

The ham which is offered for sale is cut in very thin slices and is eaten in the entirely raw state between slices of bread. The curing process evidently does not kill the trichinæ.

In the cases which came to my attention, the imported ham was probably eaten, according to the statements of the persons who bought it: but so little reliance can be placed in the testimony of the patient, either through fear of prosecution of their dealer, or through fear of having personally committed some breach of the law, that it has been impossible to determine whether they were due to the domestic or imported ham.

The disease, trichiniasis, is much more common than is supposed, and every writer in considering it calls attention to the fact that it is too frequently overlooked. It is moreover, almost always one of easy diagnosis.

H. U. Williams[1] of Buffalo states that in a series of 505 unselected autopsies in persons having died from causes other than trichiniasis, the organism was found in 5.3 per cent. McCollom[2] reported eight cases and one death in an epidemic which occurred in Boston in 1892. Grawitz[3] states that one-third of the cases of muscular rheumatism showed trichinæ at autopsy. F. H. Drew[3] in 1892 reported an epidemic of fifty cases and four deaths. The nature of this epidemic was not recognized until three deaths had occurred, and although witnessed by three physicians, it was not until the fourth week that the disease was even suspected.

In five cases which I have seen, the symptoms in each were practically identical. The first signs of disturbance were puffiness, and a very slight redness of both upper and lower eyelids, and, in most cases, there was in addition, a slight puffiness of the face surrounding the region of the eyes. Pain quickly appeared in the muscular structures, varying in proportion to the amount of motion made with the muscles. Those most complained of were the masseters, the muscles of the back of the neck, those of deglutition, the diaphragm, and the muscles of the extremities, especially of the calf of the leg and the biceps of the arm.

The digestive disturbance was slight, amounting to some nausea, a sense of distress in the stomach region, sometimes amounting to actual pain, the latter possibly due to involvement of the diaphragm, which is a favorite site for the lodgment of the organism. There was considerable diarrhea in almost every instance. Distinct chills, or chilly sensations, often accompanied the period of muscular invasion. The temperature was moderately elevated, reaching 104 degrees in one case. The pulse followed the temperature and varied from 90 to 100.

One of the greatest aids in the diagnosis is the increase in the number of eosinophils in the blood. This seems to be invariably present in the acute stages. Their numbers vary both during the course of the disease, and with the severity of the infection. At the onset they are usually few in number; in one of the above cases they numbered only 4 per cent. at the beginning, before th muscular pain became severe. As the disease progressed they continued to increase and numbered 55 per cent. o the fifteenth day. One very mild case showed not mor than 10 per cent. at any time.

These eosinophils differ from the normal in the following respects: The granules are fewer in number, less distinct, and do not have as punched-out and clean-cut edges. The acid stain is not taken as brilliantly. It is possible that these morphologic differences are due to the fact that they are young cells.

The course of the disease in the above-mentioned cases was perfectly typical, and lasted from three to six weeks.

It should be borne in mind that although the disease is more commonly found in the hog, trichiniasis in man has arisen from the ingestion of trichinous beef,[4] geese, rabbits, and dogs. In a commission[5] appointed by the German government for the study of trichiniasis, the workers reported that trichinæ were digested by the larvæ of flies, and one or two young rabbits were infected by feeding them the trichinous larvæ.

There is no known drug which will kill the parasite either within the intestines or after it has reached the muscles. The treatment now recommended is an i[illegible] purge, preferably of castor oil or calomel, followed [illegible] Epsom salts in doses of one-half or full teaspoon doses daily. Thymol in 5 grain doses three times daily is given as an intestinal antiseptic. If the muscular pain be severe, opiates may be used.

CASE REPORTS

Case 1.—Tony P., aged 24, Italian, was seen August 28, 1909.

Family and past history were negative.

Present Illness.—The patient ate prosciutto at a friend's house Aug. 21, 1909. Six days later his eyelids began to swell and, on account of his appearance, he was accused by his family of having been drunk the previous night. On account of the pain in his muscles he consulted me the following day.

Examination and Course.—Physical examination showed both upper and lower eyelids distinctly swollen and slightly reddened; the whole face was slightly fuller than normal. He complained of pain in both masseter muscles, in those of the back of the neck, on swallowing, in the region of the diaphragm, in the arms, and especially in the calves of the legs. There was considerable prostration and a sense of muscular weakness which became marked during the following two or three days. The temperature was 98.6 F.; respiration 20; and the pulse

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[1] Osler, W.: Practice of Medicine, 1901, p. 356.
[2] McCollom, J. H.: Boston Med. and Surg. Jour., cxxvii, 59.
[3] Drew, F. H.: Boston Med. and Surg. Jour., cxxvii, 61.
[4] Glazier, W. C. W.: Report on Trichinosis, Marine Hospital Service, 1881.
[5] Bericht des zur Erforschung der Trichinen-Krankheit von der k.k. Gesellschaft der Aerzte Ernannten Comités, Wien, 1867.

80. The urine was negative. An examination of the blood showed hemoglobin 100 per cent.: white cells 12,000; red cells 6,500,000; and an eosinophilia of 6 per cent.

September 1, 1909. The patient complained of general muscular pain and muscular weakness. Temperature 103.5 F.; pulse 100; respiration 24; physical examination as before, save that in the bases of both lungs there were a few coarse râles.

Without my knowledge or consent the patient was seen by another physician the day before who had made the diagnosis of laryngitis and muscular rheumatism, and had painted his throat with some form of iodin, and had prescribed salicylates.

An examination of the blood showed hemoglobin 100 per cent.; red cells 6,496,000; white cells 22,000; eosinophils 29 per cent.

Under cocain a small piece of muscle was taken from the gastrocnemius, which showed, under the microscope, many trichinæ in active movement. The temperature and pulse remained elevated for about ten days; then, gradually falling, became normal on the sixteenth day. The symptoms subsided with the temperature. Further recovery was uneventful. Although careful and prolonged search for worms was made in the stools at different periods in the disease, none was found.

A friend of this patient, who had also eaten of the ham, was soon taken with symptoms similar to the above, and was confined to his bed for eight weeks. According to the statement of my patient, the nature of the sickness of this friend was not well understood.

Case 2.—M. D. V., aged 23, Italian, was seen Dec. 6, 1909. Family and past history negative.

Present Illness.—The patient has been in the habit of eating raw ham. Six days ago he noticed a swelling of the eyelids and face, and complained of pain and swelling in the arms and legs, and an occasional chilly sensation.

Examination and Course.—Physical examination showed face and eyelids puffy, with tenderness especially of the muscles of the calves of the legs, thighs, and forearms. There was slight general edema. The white cells were 16,000; eosinophils 17.3 per cent.

December 10, 1909.—Condition of patient had remained about the same; temperature was still elevated; complained of much pain in moving the extremities. The white cells were 9,500; eosinophils 13 per cent.

December 16, 1909, the patient complained of great loss of strength. An urticaria had appeared on the trunk and extremities, accompanied by severe itching.

December 17, 1909. White cells 19,000; eosinophils 39 per cent; slight improvement in general condition.

December 23, 1909. White cells 12,400; eosinophils 33 per cent. The patient was well enough to be up and about.

January 3, 1910. White cells 11,000; eosinophils 23 per cent. The patient desired to go home, and although advised to remain at the hospital, he refused, and was discharged Jan. 5, 1910.

In the prevention of trichiniasis, little can be done under local boards of health, or by inspection under federal control, on account of the great cost and other difficulties, legal, financial and practical. The federal law now states that "meat food products imported into the United States shall be accompanied by a certificate of official inspection of a character to satisfy the Secretary of Agriculture that they are not dangerous to the health. The certificate shall set forth the official position of the inspector, and the character of the inspection, etc. . . . The official inspector who signs the certificate shall have his authority viséed before the United States consul" [at the point of exportation].

That the present laws in regard to inspection are of little value is shown by the foregoing cases.

CONCLUSIONS

1. Trichiniasis is more common than is generally supposed, being erroneously diagnosed as typhoid, muscular rheumatism, influenza, laryngitis, neuritis, nephritis, and many other diseases.

2. The diagnosis is not difficult, if in every case of generalized muscular pain a differential count of the leukocytes is made, and, if possible, a bit of muscle excised for examination.

3. More rigid examination should be made at the ports of entry, of foreign meat products, especially those of pork.

4. The eating of all raw animal foods—sausages, ham, smoked beef, and the like—should be condemned. Much can be accomplished by the physician who comes in contact with the Italians, in pointing out the dangers of eating underdone or raw pork foods.

405 Marlborough Street.

TREATMENT OF THE PARALYSIS FOLLOWING ACUTE POLIOMYELITIS

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The anatomic relation between the motor nerve-cells of the anterior horn and the muscles of the body is very complex. In this connection Lovett and Lucas[1] have pointed out that the motor cells are arranged in spindle-shaped bundles or groups, extending frequently through several segments of the spinal cord. Whether each motor nerve-cell group represents an anatomic set of muscles, or a functional grouping, has not been determined, but it is known that one group, or center, will sometimes send impulses to two or more muscles; and, on the other hand, one muscle may receive motor impulses from more than one nerve-cell group. The bearing of these facts on the lesions produced in the cord by poliomyelitis and on the treatment of the paralysis following acute poliomyelitis is most important.

Recent investigation has shown that the virus of acute poliomyelitis causes a profuse inflammation within the spinal cord, the most pronounced result of which is an injury or destruction of the motor cells of the anterior horn. This injury or destruction of the nerve-cells causes an interference with the motor function of the cord, and manifests itself in the paralysis of individual muscles or groups of muscles.

Within certain areas of the spinal cord the anterior horn cells which control individual muscles or groups of muscles may be totally destroyed, and the result would be a total paralysis of the individual muscles or groups of muscles so controlled. In other areas of the cord only certain of the motor cells controlling muscles may be destroyed, and in this case the result would be a partial paralysis of the muscles. In still other areas there may be no actual destruction of motor cells or other structures in the cord, but the presence of inflammation and inflammatory products may cause a temporary interference with the function of the cord, which would show itself as a temporary paralysis in the muscles controlled by such areas.

The pathologic changes induced by the profuse myelitis within the cord, and their effects when projected on the muscular system of the body, may be figured schematically as is shown in the drawing.

There are various methods in use in the treatment of the paralysis following acute poliomyelitis. The most important of these are the electrical treatment, the brace treatment, operative treatment, and treatment by massage and muscle-training.

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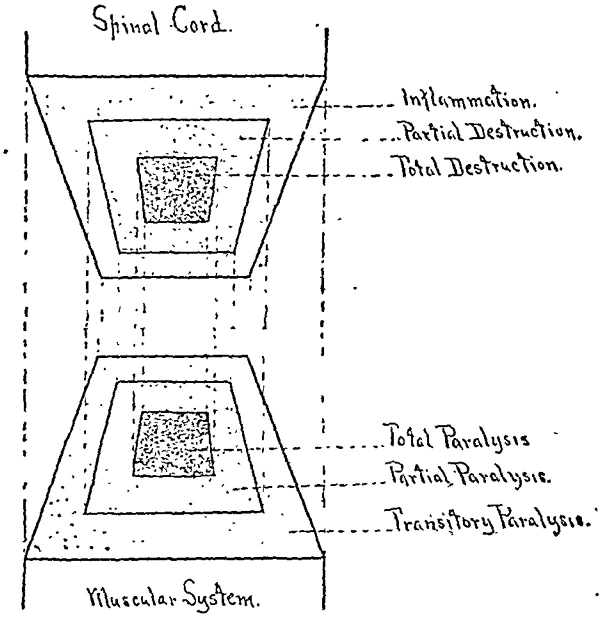
[1] Lovett, R. W., and Lucas, W. P.: Infantile Paralysis: a Study of 635 Cases from the Children's Hospital, Boston, with Especial Reference to Treatment, The Journal A. M. A., Nov. 14, 1908, p. 1677.

The electrical treatment is probably in more general use than any other form of treatment and the best authorities seem to believe that the galvanic current is of much more value than the faradic. The chief value of the electrical treatment lies in the preservation of the nutrition in the paralyzed muscles until such time as voluntary control returns. It is best employed, therefore, only in the earlier stages of the paralysis while improvement is taking place. After the paralysis becomes stationary, electrical treatment is of little, if any, use. The great mistake, frequently made in electrical treatment, is to expect too much from it. Too often it is the sole method of treatment resorted to, and many cases can be found in which the treatment has been left in the hands of parents or friends of the patient, who simply rub the poles of a cheap faradic battery over the paralyzed limbs a few minutes each day.



Schematic representation showing in the upper portion the different degrees of pathologic change in the spinal cord in poliomyelitis, and in the lower portion the corresponding impairment of muscle function.

Whitman says of brace treatment, "The object of a brace is to prevent the deformity due to weakness and to utilize the muscular power that remains, so that the disabled member may carry out its function." Another important object of a brace is to obviate the overstretching of muscles with consequent weakening and paralysis.

The use of a brace is not without its objections, however. Mild degrees of paralysis may do better without a brace, since its pressure may cause atrophy and thus defeat the ends for which it was designed; also, severe grades of paralysis do better without a brace, since its weight and pressure tend to retard improvement. On the other hand, brace treatment is absolutely necessary at times. A boy who had paralysis of both legs recovered partially, but was neglected and allowed to walk before his strength had sufficiently returned. He is now able to make practically all movements with his legs and feet; he can flex and extend the thighs and can also flex and extend the legs and feet; he can walk but suffers from a marked degree of genu recurvatum. Nothing would do this patient so much good as a pair of light braces fastened to the shoes, extending to the thigh, and provided with a lock-joint at the knee, preventing hyperextension.

Braces should always be strong, but as light and simple as possible. Thus, in cases of foot-drop, sometimes all that is necessary is a stiff-ankled shoe, or at most a brace going up one side of the leg as far as the knee. In paralysis of the leg, the brace should not be extended to go around the waist unless absolutely necessary. Motion should always be allowed at joints, if possible.

The operative treatment of the paralysis following acute poliomyelitis consists in the correction of deformities, arthrodesis, tendon-grafting, anastomosis or transfer and nerve anastomosis.

The correction of deformity, when present, is always advisable and sometimes absolutely necessary. Thus, a patient with poliomyelitis affecting the legs, and who has been neglected until contracture has taken place at the knees, must, first of all, have the contracture relieved as a preliminary to standing on his feet and walking.

The operations of tendon-grafting, anastomosis or transfer, are frequently beneficial, and sometimes offer the best method of improving the condition of the patient.

Ankylosing operations are sometimes of use, especially at the ankle.

As regards nerve anastomosis, the operation has not developed the brilliant results that its first use seemed to promise.

The consideration of massage and muscle-training has been left until the last because it has proved to be the most important method of treatment. Massage and muscle-training are two distinct procedures in treatment, but they go well together, the muscle-training supplementing the massage. In the earlier stages of the paralysis following poliomyelitis the only other therapeutic agent which can compare with massage is electricity, and massage possesses practically all the advantages of electrical treatment and none of its disadvantages. Massage seems to have an equal value with electricity in preserving the nutrition of muscles and in stimulating them to growth, and it is much more agreeable to the patient. This latter fact is especially true with young children who are very apt to be frightened by electrical treatment.

In giving massage to poliomyelitic patients, it should always be borne in mind that the affected muscles are weak and sensitive. Strong massage would have a tendency to weaken the muscles still more and to hasten their atrophy; the massage should therefore be very light in quality. In the treatment of the late stages of paralysis, massage is of great value as a preliminary to muscle-training.

Before discussing muscle-training it will be of advantage to recall to mind the pathologic changes in the cord in poliomyelitis. It will be remembered that there may be, first, areas of total destruction; second, areas of partial destruction; and, third, areas affected only by transitory inflammation. In relation to these pathologic changes, the paralysis resulting from total destruction is absolute, and it is obvious that no form of treatment can influence it in any way. On the other hand, the paralysis resulting from transitory inflammation is not permanent and will clear up as the primary inflammation clears up, under almost any or no form of treatment.

It is in the paralysis which results from areas of partial destruction within the cord, where the motor cells controlling individual muscles or groups of muscles are merely injured, or only in part destroyed, that the benefits of proper treatment are best observed, and without doubt, muscle-training is the most valuable therapeutic procedure in these cases.

The aim of muscle-training is twofold. In the first place, through voluntary impulses from the brain the effort is made to improve the function of the injured motor cells, and in cases in which there has been a partial destruction of the cells supplying individual muscles, or groups of muscles, the effort is made to train the remaining cells to do the work of the many destroyed. In the second place, the aim of muscle-training is to build up and strengthen the muscles through voluntary contraction. It is a well-known fact that voluntary contractions are much more efficacious in building up and strengthening a muscle than are contractions caused by electricity, or any other means.

Muscle-training should not be started so early as massage. It should not be started until all acute symptoms have subsided and the muscles have lost their irritability. In many cases it may be well to wait as long as a month or six weeks before beginning the muscle-training. Otherwise, the earlier muscle-training can be started, the better it will be for the ultimate outcome of the case.

The treatment of muscle-training is best given on an ordinary massage table or any other firm support. The patient should be freed from distracting influences and encouraged to devote all his energies to the work. All clothing should be removed from the limbs so as not to hamper their movements. Too much should not be attempted at first. The instructor should start with the movements that the patient can make and gradually try to instruct the patient in new movements. It is not a difficult matter to bring the muscles whose nervous mechanism has been but little damaged into activity again, but with other muscles this may be very difficult. There are cases in which the muscle-sense seems to be lost; the nervous mechanism is present, and the power of muscular contraction is present, but there seems to be a lack of coordination between the two. In such cases the patient, while undergoing passive movement produced by the instructor, tries to make the movement himself. In this way, the association-paths in the central nervous system are educated and developed. As soon as a movement has become established, resisted exercises are of the greatest value in developing strength.

Twenty minutes to half an hour a day, or, in some cases, every other day, is time enough to devote to a case. Great care should be taken not to overtire the weakened muscles; the instructor should not be in such haste to get results as to strain the muscles or joints, but he should aim to get some improvement each day. Progress will of course be slow at times and successful treatment requires care and perseverance on the part of both instructor and patient.

In young children, the exercises of muscle-training should be given in the form of play.[2] In older children, the stimulus of competition with other children in a class is advantageous. An appeal to pride and ambition is of value in older patients. Each case is a study in itself.

There is always a temptation to get patients into braces and walking too early. The use of heavy braces is apt to mean the end of improvement. Before the patient is allowed to walk, creeping exercises are of great value; following these, or along with them, the patient is allowed to kneel, and, last of all, to assume the complete upright positon. In the end, braces of some sort will usually be needed.

In cases in which muscle-training has not been started early, in addition to the regular training of the nervous mechanism and the developing of the muscles, contractions may have to be overcome; muscles that have become paralyzed by over-stretching brought into activity again, and muscles weakened and atrophied by disuse strengthened.

Muscle-training is useful in all cases of paralysis following poliomyelitis, and at any stage of the paralysis after the acute symptoms have subsided. In the cases in which brace treatment or operative treatment is necessary the brace or operative treatment should always be supplemented by muscle-training. Muscle-training should be given with a view to ultimately giving up the brace.

2 Chestnut Street.

TWO CASES OF CESAREAN SECTION WITH UNUSUAL COMPLICATIONS*

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CASE 1.—*History.*—The patient, Mrs. G. B. K., white, was 29 years old. Her mother had had ten children and died in childbirth. Three of these children died, no cause known. Until the patient was 3 or 4 years of age she walked normally. For some reason she then lost the use of her lower limbs and has since used crutches. This condition was attributed to a fall and injury to knee-cap. Other than this she gives no history of disease. She was married in June, 1909. Last menstruation was Dec. 1, 1909.

Examination.—June 13, 1910: Patient is a dwarfed woman, presenting the flaccid useless legs of a child who had gone through an attack of infantile paralysis and regained but slight motion. The abdomen was enlarged to about the size of six months' gestation. The pelvic measurements were as follows: Between the spines, 21 cm.; between the crests, 23 cm.; between the trochanters, 26 cm.; left oblique, 19 cm.; right oblique, 19.5 cm.; external conjugate, 15.5 cm.; and internal conjugate, 7 cm. The type was that of an infantile or undeveloped pelvis, outlet being unusually small.

Progress of Case.—Section at term with removal of the uterus, was advised and accepted. The patient's own physician examined the urine until Aug. 1, 1910, and reported it normal. I saw one specimen in the first week of August and found it free from any pathologic elements. On Aug. 9, 1910, scarcely one week later the patient sent for me to relieve sleeplessness and general edema. The edema of face, hands and feet was very marked. The urine secured a few days later was solid albumin on boiling and contained all kinds of casts. The patient was rushed to the hospital and eliminative treatment started vigorously. The total quantity of urine had been diminished before entering hospital. In spite of treatment it rapidly grew less: August 10, 32 ounces; August 11, 13 ounces. She would be at term Sept. 7, 1910, and it was felt that any delay was especially dangerous and from the nature of the operation before us we wished to avoid eclampsia.

Operation.—Aug. 11, 1910. Cesarean section was done; the baby was a living male child, weighing 4 pounds 6 ounces The uterus was then removed by the plan suggested by Dr. E. P. Davis, which is as follows: A silk ligature is placed on each of the ovarian vessels, then heavy hysterectomy clamps are clamped across the lower uterine segment, the uterus being cut off above. The peritoneum is sewed together and then to the sides of this stump which is left free outside the peritoneal cavity to be dressed. The patient is placed on the operating table before ether is started and ether stopped early. In the present instance the entire operation was finished in twenty-five minutes.

Postoperative History.—After operation the urine remained scant. August 12, 4 ounces; August 13, 11 ounces. On August

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[2] Illustrations of this have been given in a previous article; Albany Med. Ann., April, 1910.

* Read before Philadelphia Obstetrical Society, Jan. 5, 1911.

13, convulsions supervened, and while not frequent they were severe; the patient had six in all, in two days' time. On August 16, the urine secreted amounted to 56 ounces and from that time the woman improved rapidly. The clamps held firmly; the right broad ligament showed some slight trauma from slipping of the clamp in convulsions. The wound healed by sloughing and granulations; the clamps were removed at end of five days. Before this the temperature remained below 99 F., following there was a slight elevation—100 to 100.4 F. from absorption from stump.

The patient left the maternity hospital at the end of a month, having made a good recovery. Both mother and baby are doing well.

Case 2.—*History.*—The patient, Mrs. R., white, twice married, was 41 years old. Her mother died of cancer of the uterus. The patient had had the usual diseases of childhood. She gives a vague history of an abscess in the pelvis which evacuated through the bowel, during first marriage. She was married ten years to first husband, no pregnancies. To her present husband she had been married about two years, and was pregnant four months. She came under my care for an acute attack of pain in the lower left abdomen; temperature was 100-101 F. The pain was unrelieved by the usual measures and a provisional diagnosis was made of pelvic abscess complicating pregnancy with possible rupture and beginning peritonitis.

Operation.—I opened the abdomen and found that the mass which had been discovered in the pelvis, was a soft fibroid, incarcerated in the pelvis, somewhat twisted and congested: it was intramural in origin with a broad base and was larger than the four-months' pregnant uterus from whose left side in the folds and above the broad ligament it arose. There was no evidence of necrosis of the fibroid. After freeing the tumor from the pelvis and finding that myomectomy was an impossibility I refused to do a hysterectomy and closed the abdomen.

Postoperative History.—The pain and temperature subsided immediately; the woman made a rapid recovery and left the hospital at end of ten days practically well except for a slight ether nephritis. She was allowed to go to term, though suffering some unusual discomfort and at times pain in the left side.

Cesarean Section.—On the advice of her physician and because her mother had died of cancer of the uterus, she requested that both baby and fibroid be removed at one sitting. She was taken to Jefferson Hospital (Maternity) and on Aug. 16, 1910, an abdominal hysterectomy was performed, and a well-formed male child delivered. The operation proved somewhat difficult because of the fibroid in the left broad ligament extending down to the vessels of the left side; apparently there was an old adhesion or cicatrix from a previous left-sided pus tube also.

Postoperative History.—The patient was somewhat shocked but reacted well and presented a normal postoperative chart for one week. Then the temperature rose to 101 F. with severe pain in the left side. This pain was relieved only by evacuating through the vault of the vagina a clot of blood in and posterior to the broad ligament where the fibroid and adhesion had existed.

The patient nursed her baby and made a good recovery. The child was small but not deformed—5 pounds 4 ounces.

This patient reported to me December 3. She is gaining in weight, nursing the baby and has no difficulty in the pelvis, but there are some symptoms of the menopause.

These two cases illustrate well the success attained in some complicated cases by the use of abdominal delivery.

There is no form of delivery so rapid as that represented by the first operation, and given a woman in whom future pregnancies are neither desired nor advised we can often save patients in cases which would otherwise be practically hopeless.

In the second case, the fact is illustrated that large single fibroids or even multiple fibroids are no bar to the development of a viable child.

400 Chestnut Street

Therapeutics

PRURITUS: ITCHING

To the clinician, pruritus, or itching, represents one of the most puzzling problems in medicine. There are few subjects in regard to which there are so few things definitely known as this one. The clinical manifestations are connected with the terminations of the sensory nerves in the epidermis. Concerning this point there is practical uniformity of sentiment among all observers. As to what affects these nerve endings, so as to give rise to itching: there is a great diversity of opinion. Many believe that it is associated with hyperemia and inflammation of the skin, this condition sometimes resulting in atrophy of the skin, with a continuance of the itching. There are many reasons for believing that these pathologic conditions are not the efficient cause of the itching in many cases.

For example, a common form of itching is pruritus ani, observed in children, caused by the presence of the *Oxyuris vermicularis*, or pin-worm. When these worms are present there may be at times intense itching without any local lesion, or any local disturbance of the nutrition of the skin, evident on ocular inspection. Presence of the worms on the skin in this region gives rise to the itching, but this must be due to something more than the simple presence of small foreign bodies, for no one has demonstrated that this unpleasant symptom may be caused by the presence in the same situation of small pieces of fine thread, or other similar bodies which do not possess active life at the time.

Another common cause of itching, especially in children, is the presence of pediculi, or lice. It seems to be at least open to question whether the itching produced by these parasites is due alone to their presence on the skin in a quiescent state, or even to their active movements on the skin.

Still another instance of intense itching associated with a parasite is that observed in scabies. The startling rapidity with which the symptom of itching subsides under the sulphur treatment of this condition would indicate that the itching is due to something besides the presence of the foreign body, for presumably the application of the sulphur destroys the itch mite, leaving its body in the skin, but as soon as its life is destroyed the itching ceases.

One of the most common forms of itching is that due to the bite of the mosquito. This is certainly out of all proportion to the local congestion and inflammation, and undoubtedly is due to the action of some poison injected by the animal beneath the skin.

Turning now from these obvious external causes of itching and considering the itching caused by jaundice, it will be generally accepted that the itching associated with the common form of jaundice dependent on obstruction to the flow of the bile into the intestine, is due to the irritation of the ends of the sensory nerves by some substance contained in the bile which is absorbed into the blood, or at least by the presence of some product resulting from decomposition of the ordinary constituents of the bile.

Urticaria is another form of skin disturbance associated with intense itching and is frequently due to the ingestion of some unusual article of food. It would seem probable that here the itching is due to some poison carried to the nerve endings in the blood, as is the case in jaundice.

It will be noted that many diseases accompanied by congestion and inflammation of the skin cause itching, but it is a curious fact that the disease, which is constantly accompanied by cutaneous lesions, has as a striking characteristic that its skin lesions are usually unaccompanied by itching. This disease, of course, is syphilis, which we might expect for a double reason would be generally accompanied by itching, but it might be supposed that the poison which unquestionably circulates in the blood and causes the lesions of the skin would give rise to itching, and it would also be supposed that the congestion and inflammatory conditions produced by it would be accompanied by itching, but such is not the fact.

With certain general diseases pruritus is a common symptom, especially diabetes and that common condition associated with abnormal metabolism, known as lithemia, and which is believed by many to be associated with gout. These diseases are all characterized by the presence in the blood of chemical bodies, which ordinarily do not belong there.

It is hardly worth while here to undertake an enumeration of the causes which are commonly assigned for pruritus. They will become apparent incidentally in connection with what will be said in regard to the general treatment of the condition. It has been already stated that the condition is associated with the terminations of the sensory nerves in the epidermis. It is commonly taught by writers that pruritus may be of central origin. It is asserted to be of not infrequent occurrence in hypochondriasis and hysteria. Still another form is described as being of psychic origin, and is seen in insane persons who have hallucinations of the presence of parasites, such as pediculi, on the skin; hallucinations which it is often difficult to remove, and which are sometimes removed only after repeated applications of antipruritic remedies.

In undertaking the treatment of a case of pruritus it is necessary to investigate every organ of the body so as to restore to its normal action, if possible, any organ which may be acting abnormally or which may be under abnormal conditions. First, the condition of the digestive organs must be carefully investigated, and the diet must be carefully regulated. There are two types of people in whom pruritus is seen: one is the stout, robust, plethoric person who is continually over-eating, and the other is the thin, hungry person who is continually starving himself. In the case of the former the diet should be cut down. The protein substances should be greatly reduced, and the starches and sugars should be considerably limited. If it is found that certain articles of food are not completely digested but give rise to fermentation, such articles should be reduced to an amount that can be taken care of by the digestive organs. In the latter class, the thin patients, fatty articles of food should be advised, and an adequate amount of protein should be given to afford adequate nourishment. In both classes, fruits, especially oranges and grapes, will be found exceedingly useful.

If the bowels are constipated, measures should be taken to make them act regularly and abundantly. Small doses of calomel, for a week or two, are sometimes useful for this purpose. For instance, the following prescription may be used:

℞	Cm.		
Hydrargyri chloridi mitis..........	20		gr.iii
Magnesiæ	5	or	gr.lxxv
Sodii bicarbonatis.................	10		ʒiiss

M. et fac chartulas 20.
Sig: A powder three times a day, after meals.

℞	Gm.		
Hydrargyri chloridi mitis..........	10	or	gr.iss
Sacchari	4		ʒi

M. et fac chartulas 20.
Sig.: Take one after each meal.

If this amount of calomel is not sufficient to cause free movements of the bowels, a saline may be given in addition to or in place of it. For instance, 1 or 2 drams of the sulphate of magnesium or of the phosphate of sodium may be given in half a glassful of water in the morning, before breakfast.

Pruritus is frequently associated with deficient elimination, and especially of the kidneys. If the condition of the urine is found to indicate such defective elimination, the internal use of alkalies will generally be found of advantage. In the case of the plethoric individual, with a strongly acid urine of high specific gravity, the following prescription may be used:

℞	Gm. or c.c.		
Potassii citratis	40		ʒx
Aquæ menthæ piperitæ	200	or	fl.℥vi

M. et Sig.: Two teaspoonfuls, in water, three times a day, after meals.

There is no special particular reason for the "A B C" mixture which is used to alkalize the urine either in gonorrhea or any other condition. The acetate, bicarbonate, and citrate of potassium act similarly. It is only a question of taste and the amount used. The citrate of potassium is the most pleasant: the bicarbonate the most disagreeable. The acetate may alkalize the urine in a little smaller dose than does the citrate. The above prescription presents an alkali in a pleasant form and perfectly bland to the stomach. It should be taken with plenty of water. If the above dose, three times a day, does not alkalize the urine (if that is the object desired), it may be administered four times a day.

Although it is admitted that pruritus is associated with the sensory nerves, and it is claimed that in some instances it is due to a disturbance of the central nervous system, no drug acting on the brain, spinal cord or nerve trunks is very effective in pruritus, possibly with a single exception of bromids, which really act by dulling the peripheral endings of the nerves. The treatment of pruritus with bromids is generally inadvisable, as they act by causing nerve debility and later muscle debility and loss of nutrition. Temporarily such treatment is often good treatment.

Generally, in order to stop the itching, it is necessary to apply some drug to the skin which will lessen the sensibility of the ends of the nerves which are in trouble. Several drugs are used for this purpose. The most useful are phenol (carbolic acid), menthol, camphor, chloral, thymol, oil of cade, alcohol and alkalies. The following are a few prescriptions which are suggestive. Various modifications of any one of them may act as satisfactorily.

℞	c.c.		
Phenolis	5		
Liquoris potassæ	5	or	āā fl.ʒiss
Petrolati liquidi....... ...... ad	50		ad fl.℥ii

M. et Sig.: Use externally as directed.
Shake.

Or,

℞	c.c.		
Phenolis	3		fl.ʒi
Glycerini	10	or	fl.ʒiii
Liquor calcis	25		fl.℥i
Aquæ ....ad	100		ad fl.℥iv

M. et Sig.: Sponge over irritated surfaces.
Shake.

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[*For other information see second page following reading matter*]

SATURDAY, APRIL 8, 1911

RECENT STUDIES OF LEPROSY

From time immemorial leprosy has been held in almost superstitious horror by the laity—thanks probably to the Scriptural attitude toward it; and to physicians even now it presents problems such as are encountered in few, if any, other diseases. In light of recent contributions toward its study, however, many of these problems appear to be in a fair way toward solution. It is almost two years since Clegg[1] first announced the successful prolonged cultivation of the organism of leprosy on artificial media, and Duval[2] since then has devised methods that make this proceding one of comparative simplicity. Clegg's method consisted in first growing the organism along with amebas and symbiotic bacteria; after several transplantations under such conditions, the bacillus became altered sufficiently to permit growth in pure culture. Duval, however, has shown that the essential element necessary for its artificial growth is the presence in the medium of tryptophan and other free amido-acids—factors that were furnished in Clegg's experiments presumably by the action of the bacteria on dead amebas. Like Clegg, Duval found that the bacillus grew more readily after being cultivated artificially for some time. The organism was found by both investigators to be extremely hardy; it resisted a temperature of 70 C. for half an hour, and Duval and Gurd[3] were able to cultivate it from tissues kept in salt solution at room temperature for over eight months. Nor did overgrowth with saprophytic or pyogenic organisms appear to affect its vitality in the least.

Success in animal inoculation has advanced almost equally with the progress in artificial cultivation of the organism. Clegg was able to produce, from inoculation of pure cultures, localized lesions in the guinea-pig closely resembling those in man; and Sugai[4] showed that the Japanese dancing mouse was sufficiently susceptible to undergo systemic infection from local inoculation. Neither of these animals, however, showed a clinical picture like that in man. But Duval[5] has recently, by successive injections of a pure culture of the leprosy bacillus, succeeded in producing in the monkey (*Macacus rhesus*) a type of disease very similar to the human form, and in reobtaining the acid-fast organism from the remote lesions.

Of considerable interest as bearing on the methods of transmission, is the fact that Duval and Gurd were able to cultivate the organism from nasal secretions in two of five cases. They also succeeded in inoculating mice by rubbing cultures of the bacillus into their nares after gentle scarification. Taken in connection with the high resisting power of the organism, these facts would appear to speak strongly in favor of the usually adopted, though much disputed, measure of segregation.

The same investigators have taken up the serum reactions of leprosy. Amboceptor, specific apparently for the lipoid constituents of the organism, they found present in considerable amounts. Agglutinins occurred in small quantities; and the serum of leprous patients was found by them not to differ from that of normal individuals in content of complement. Their results as to specific amboceptor are confirmed by the work of Biehler and Eliasberg,[6] but unlike them, Eliasberg claims to have demonstrated the absence of free complement in the serum of lepers.

It will be seen that as a result of the foregoing work, Koch's postulates have now been fully carried out for leprosy. Considerable light has been thrown on the much argued question of methods of transmission. And with means at our disposal both for obtaining *Bacillus lepræ* in pure culture, and for successfully inoculating experimental animals, further progress should be rapid. Profiting, however, by our many disappointments with tuberculosis—a disease resembling leprosy in so many respects—it will be well to guard ourselves against expecting too much in the way of effective therapy of the disease as a result of recent experimental work.

WHITE PHOSPHORUS

From time to time The Journal has directed attention to the efforts which have been made to obtain Federal legislation prohibiting the use of white phosphorus in the match industry in this country. The stand taken by The Journal is that such legislation is a much-needed step in the direction of public control of the dangerous trades, and that for this reason the medical profession should endorse it. In an article in the present issue, Dr. Robert H. Ivy criticizes this view and presents an argument for the continued use of white phosphorus in the match industry on the ground that "barring absolute carelessness on the part of employees" white phosphorus can be used without danger. He proceeds to give his experience as examining surgeon for one of the match factories, and concludes that the substitution of the safe sesquisulphid for the poisonous white phosphorus is unnecessary, provided proper precautions are observed.

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[1] Philippine Jour. Sci., 1909, iv, 403.
[2] Jour. Exp. Med., 1910, xii, 649; 1911, xiii, 365.
[3] Arch. Int. Med., 1911, vii, 230.
[4] Lepra, 1909, viii, 203.
[5] Jour. Exp. Med., 1911, [illegible]
[6] Deutsch. med. Wchnschr., 1911, xxxvii, 302-304.

Dr. Ivy says that he requires from the employees of a match factory no unusual precautions, only that they shall not be guilty of a carelessness comparable to a miner's playing with dynamite. This seems to be an exaggerated description of such careless acts as picking the teeth while at work, chewing gum or eating candy while at work, drinking water from a glass standing on the work table, yet all these are recognized as dangerous actions for a match worker.

Dr. Ivy describes conditions in the factory with which he is connected and in which regular monthly dental examinations have been made for a period of two and a half years. No employee who entered the factory during that time has developed necrosis of the jaw. Some of these employees have not been at work more than six months; ninety-six have been there less than two and a half years. Now it is interesting in this connection to consider the length of exposure to phosphorus fumes given in the histories of cases of phosphorus necrosis. The report of John B. Andrews,[1] quoted by Dr. Ivy, gives thirteen histories in which this detail is noted. Ten individuals had worked with phosphorus for periods ranging from three and a half to forty years before they developed necrosis, only three for periods of less than three years. Five more gave the length of time as "several years," which would surely be more than two years. It would, therefore, seem that Dr. Ivy's negative conclusions can hardly be regarded as founded on sufficient data.

It is always difficult for one country to benefit by the experience of another, yet it would really be a great economy of time and effort could we consent to be taught by the past mistakes of our European cousins. We are now in the same position that most of the great European nations occupied ten or fifteen years ago. They wasted many years and permitted much human suffering in their effort to regulate the use of white phosphorus instead of abolishing it, but one by one they were obliged to confess their efforts a failure and to become converts to the prohibition policy. In 1906, an international agreement to prohibit the manufacture, importation or sale of white phosphorus matches was signed by France, Germany, Italy, Switzerland, Holland and Denmark. Great Britain held off, and that country's experience is illuminating for us. In 1898 the British Parliament appointed a committee of three experts to inquire into the question, a chemist, a dentist and a physician. The physician (Thomas Oliver) stated that nothing short of the total prohibition of white phosphorus would make match factories safe, but the dentist gave it as his opinion that proper regulation would meet the danger. Parliament at first accepted the more optimistic view, strengthened the regulations, and provided for examining dentists and doctors; but cases of necrosis continued to be reported, and in 1908 a law was passed prohibiting the use of white phosphorus. In that same year Great Britain signed the international agreement. It would seem then, that regulation of the industry has had a fair trial, and that it is hardly worth while for us to repeat the experiment, for the regulations which proved a failure in Europe were far more stringent that any we should be likely to enact in the United States. It is scarcely probable that our state legislatures would require factories to be built according to government plans, with compulsory medical inspection, notices concerning the dangers of the work which the employer must read aloud to his employees at stated intervals, limitation of the percentage of phosphorus in the paste, etc.

Lest anyone should believe that the situation in the United States differs from that in foreign countries, and that the match industry here is not productive of phosphorus necrosis, we quote from the Bureau of Labor investigation referred to above. There are about 3,500 employees in fifteen of the seventeen match factories in the United States. Of 3,383 whose occupation was specified 65 per cent. are exposed to phosphorus fumes; 95 per cent. of the 1,395 women are so exposed. An intensive study of three factories was made, and eighty-two cases of necrosis were discovered. Andrews describes a factory which is a model in equipment and in care of employees: "Here, if anywhere, careful regulation over many years and favorable conditions should have resulted in the complete disappearance of phosphorus necrosis. Yet forty cases of phosphorus necrosis" (fifteen involving loss of the jaw by operation) "were easily secured."

Were there no way of making matches except through the use of this poison we might resign ourselves to such conditions, but in view of the fact that the industry may be made entirely safe, it seems that as medical men we have no choice but to favor the legislation which is framed to accomplish this result.

PUBLIC HEALTH BULLETINS

The fact is not so well known by physicians as it should be that the national government, through the Public Health and Marine-Hospital Service, is issuing for gratuitous distribution a valuable series of bulletins on matters relating to public health. The series now numbers forty-four, and from the list of those already published it can be seen that at least the more recent ones deal with live and important phases of medicine as it relates to public health. These bulletins have been written by men who have had especial facilities for the ministers of Iola, a resolution was adopted and ordered sent to all the ministerial associations of the state, enlisting their aid in securing the passage of a law to restrict the practice of healing to those who could demonstrate their fitness and qualifications to treat the sick. After asking the cooperation of the ministry "in bringing before the legislature . . . some measure looking toward the more equitable regulation of the practice of the healing art," the resolutions continue: "A large and growing class of 'healers' and 'practitioners' of various names, forms and cults offer their services to the sick and appeal to the public for patronage. They are unlicensed and, therefore, irresponsible so far as regulation by the state is concerned. At the same time they are for the most part ignorant of that scientific knowledge which would enable them to make intelligent diagnoses of disease, to discover contagious diseases and to understand the true limits of their ability, thus causing much needless suffering and numerous untimely deaths. We believe that in the interest of common justice and for the safeguarding of the public health. the laws of our state should be so amended as to require all who assume to treat the sick, by whatever method. to secure a license from the proper state board of examiners after suitable examination as to their qualifications." Probably no men are better able to appreciate the harm done by ignorant "healers" than are the ministers. Their cooperation and support would go far to secure the establishment of a higher standard for entrance into the practice of medicine as well as a stricter and more impartial enforcement of the law for the protection of the public health.

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[1] A close examination of the histories given by Andrews brings to light several significant facts. Three toothless individuals, with no apparent channel for infection present (the roots had also been removed), developed phosphorus necrosis. A man who had worked developed necrosis. Two individuals are mentioned as being unusually developed it. Two individuals are mentioned as being unusually intelligent and as having taken all possible precautions to protect themselves, yet falling victims to a severe form of the poisoning. One case of fragilitas ossium was discovered. Oliver speaks of having found this condition among the Belgian match workers at Grammont.

NEEDED CHANGES IN ILLINOIS LAW

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MUNYON THE HOPEFUL

"If the Sign of the Cross were to be destroyed the next best sign would be 'The Index-Finger Pointing Heavenward.'" Thus, in a quarter-page advertisement in one of his home papers, speaks Munyon, the genial quack whose uplifted finger, aggressive pompadour and sugar pills have made Philadelphia famous. Genial, did we say? Well, until recently. Of late Fate seems to have been unkind to this erstwhile dispenser of gladness and saccharine innocuity. Unimaginative government chemists are recently reported to have shown that the principal ingredient in Munyon's blood and asthma "cures" was ordinary cane sugar and the "Professor" has been penalized by the government to the tune of six hundred dollars. But, with a supreme disregard for the petty troubles of business, Munyon announces in large advertisements that he is "organizing a Hope Cult, whose mission is to preach Health-ism, Hope-ism and Love-ism." Talk about optimism! And as a clincher, we find heading one of the "Professor's" appeals to the public, this gem:

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GOAT'S MILK IN MALTA

Fresh cow's milk is scarce in Malta, and most of the natives use goat's milk. According to U. S. Consul James Oliver Laing, at Valetta, there are about 10,000 milch goats in the islands. These are driven from house to house and milked in the presence of the buyer. Goats are tied at the doors of cafés and when milk is wanted for coffee the goat is milked by the owner. With a little care this method should eliminate much of the contamination of milk under the ordinary methods of handling and distribution. Though a primitive method and applicable only within narrow limits, it would seem to have some advantages. As a large proportion of the goats, however, harbor the germs of Malta fever, the foreign residents refrain from using the milk, and its use is forbidden in the British garrison. Mediterranean fever is intermittent and is one of the most feared diseases in the islands. for, if not fatal, its long duration and the ensuing debility often lead to other maladies Attempts have been made to better conditions on the goat farms, and some progress has been made. Though milk is an excellent food, it seems to have serious disadvantages, even when drawn from original containers.

FREE MEDICAL EDUCATION

Whether or not the remedy for the most serious evils of our present method of recruiting the profession would be relieved by making medical education free, as Dr. Ferguson suggests in this issue, is an open question, and his arguments do not seem convincing. It would be most unfortunate, as President Vincent said in his address,[1] if the expense of obtaining a medical education should prevent those qualified by natural endowments from entering the profession. We doubt, however, whether this would often occur: at all events Vincent's plan of endowed scholarships is more practicable and in other respects better than the attempt to offer opportunities for free medical education without first applying some test of ability. Free medical education would certainly open the way for a still larger number of incompetents. If we are to reach our ideal of every physician being in all respects a thorough scientist and an honorable gentleman, some other method of selection of the material would be more economical and efficient than that of weeding out the applicants in a free-to-all course of medical instruction. It is a question also whether the number of unworthy and undesirable medical colleges would be diminished to such an extent as Dr. Ferguson seems to expect. A sentence in Dr. Ferguson's paper seems to be somewhat open to misunderstanding, to say the least: The scrutiny of the religious, social and political qualifications of candidates, with the popular signification of those adjectives, has a rather unfortunate sound. Of course it was understood by his hearers as it was meant, merely as a statement of the necessity that the physician should be a gentleman of good moral character.

A GERMAN VIEW OF AMERICAN MEDICAL SCHOOLS

In a recent number of the *Wiener klinische Wochenschrift*, a German-American, writing from this country, discusses medical education, especially the low-grade medical schools, and other medical conditions in this country. The *Wochenschrift* says, in an editorial note on this article:

> "All who know anything about conditions in America are full of admiration for the almost model achievements and progress in all lines in that country. It is almost universally conceded that the humanitarian and especially the scientific institutions of America—almost exclusively the creation of private initiative—in the scale in which they are conceived and the perfection of their equipment, cast all that Europe has to offer in this line so much in the shade that the scientists best acquainted with the facts have not hesitated to express their concern that Europe in time will be unable to compete with them, owing to the wise liberality with which scientific research is fostered over there. All this makes it the more interesting to learn that, side by side with conditions almost unsurpassed in their excellence, abuses flourish under the protection of individual liberty—abuses so dire that it seems actually impossible to conceive of their existence, especially in connection with medical education. In the very fact, however, that the Americans themselves have had the courage and the sincerity to lay bare these abuses lies the best evidence of their moral energy and this offers, at the same time, the most certain guarantee of a speedy and radical reform."

While this hearty recognition is encouraging, such a criticism of our educational conditions is and should be mortifying to our national pride. The reasons for the present wide-spread publicity and systematic exaggeration of such abuses as do exist in the profession in America are probably not entirely understood in Germany, yet the *Wochenschrift* is unquestionably right in stating that these abuses "flourish under the protection of individual liberty," and that some of the most flagrant of these abuses are "in connection with medical education." As a people, we have not yet learned that the rights of one man end where the rights of another man begin, and that no individual has a right, even in the sacred name of liberty, to do that which is harmful to the community. The diploma mill and the commercial medical school are unknown in Europe. The ignorant but mercenary physician is justly regarded there as a grave social danger. In these directions we have much to learn from Germany. Only by the establishment and maintenance of high standards of medical education can we hope to retain the respect of other nations and to effect those "speedy and radical reforms" which conditions demand.

Medical News

ILLINOIS

Hospital Bankrupt.—The Evangelical Lutheran Association, Granite City, which owned and managed the hospital in that place, is said to have filed a petition in bankruptcy, March 31.

Personal.—The office of Dr. Joseph Pugue, Edwardsville, was burned, March 27. The building and contents were a total loss.——Fire in Clinton, March 21, destroyed the office of Dr. Joseph C. Myers.

State Sanatorium Bill.—House Bill No. 57 for a state sanatorium for tuberculosis was considered by the judiciary committee of the house of representatives, March 29. Arguments in favor of the bill were made by Representative Shurtleff and by Dr. George W. Webster, president, and Dr. James A. Egan, secretary of the State Board of Health. It is believed that the committee will approve of the bill which carries an appropriation of $500,000.

Scarlet Fever in Chicago Suburbs.—Ravinia, Highland Park, and Evanston have reported recently a number of cases of scarlet fever. In Ravinia, the cause has been traced to a grocery store, in which the postoffice is located, and in which seven children of the proprietor have been ill with scarlet fever, but not quarantined. The contents of the grocery store were confiscated by the State Board of Health and taken to the Skokie Swamp and burned. The store was closed and thorough disinfection of all infected houses was made.

Kill the Optometry Bill.—The optometry bill, House Bill 121, will lie in judiciary committee until action is taken on a similar bill in the senate, No. 140. The State Board of Health requests that the president and secretary of every county society write their senator in Springfield in the name of the society, urging that he oppose Senate Bill 140, and suggests further that the president and secretary urge as many other members as possible to write their senator at Springfield on the same line. The action that the house of representatives will take on the house bill will be predicated entirely by the action that the senate takes on the senate bill. The senate bill is now on order of second reading.

Chicago

Personal.—Dr. and Mrs. Robert H. Babcock and family have returned after two months in California.——Dr. Arthur H. Geiger sailed for Europe, March 31.——Dr. John B. Murphy has returned from a trip to Florida and is ill at his home with typhoid fever.

Health Alliance.—The Citizens' Health Alliance, which was organized in Hull House in November last, has opened permanent headquarters at Room 1202, Ashland Block, and appeals for broader membership. The object of the alliance is to comthe ministers of Iola, a resolution was adopted and ordered sent to all the ministerial associations of the state, enlisting their aid in securing the passage of a law to restrict the practice of healing to those who could demonstrate their fitness and qualifications to treat the sick. After asking the cooperation of the ministry "in bringing before the legislature . . . some measure looking toward the more equitable regulation of the practice of the healing art," the resolutions continue: "A large and growing class of 'healers' and 'practitioners' of various names, forms and cults offer their services to the sick and appeal to the public for patronage. They are unlicensed and, therefore, irresponsible so far as regulation by the state is concerned. At the same time they are for the most part ignorant of that scientific knowledge which would enable them to make intelligent diagnoses of disease, to discover contagious diseases and to understand the true limits of their ability, thus causing much needless suffering and numerous untimely deaths. We believe that in the interest of common justice and for the safeguarding of the public health, the laws of our state should be so amended as to require all who assume to treat the sick, by whatever method, to secure a license from the proper state board of examiners after suitable examination as to their qualifications." Probably no men are better able to appreciate the harm done by ignorant "healers" than are the ministers. Their cooperation and support would go far to secure the establishment of a higher standard for entrance into the practice of medicine as well as a stricter and more impartial enforcement of the law for the protection of the public health.

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[1] Vincent, G. E.: Standards and Authority, THE JOURNAL A. M. A., March 25, 1911, p. 894.

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the coming year. Of this $136.000 is required by the General Hospital, $28.000 for the new contagious disease hospital and $61.000 from the health department proper.

Court Decides Will Valid.—The Supreme Court of Missouri, on March 31, sustained the validity of the will of the late Robert A. Barnes, St. Louis, who bequeathed about $3,000,000 for the erection and endowment of a hospital to be conducted under the rules and regulations of the Methodist Episcopal Church South.

New Officers.—Howard County Medical Association, at its annual meeting in Fayette, elected the following officers: president, Dr. Uriel S. Wright, Fayette; vice-presidents, Drs. Doke J. Gentle, New Franklin, and Wesley R. Hawkins, Glasgow; secretary-treasurer, Dr. Charles W. Watts, Fayette; delegate to the state association, Dr. Joel Y. Hume, Armstrong, and censors, Drs. Charles O. Lewis, Vaughan Q. Bonham and Andrew W. Moore, all of Fayette.

Personal.—Dr. Isaac R. Lane, Mountain Grove, is seriously ill in Alexian Brothers' Hospital, St. Louis.——Dr. Gustav B. Schultz, Cape Girardeau, has been appointed a member of the State Board of Health.——Dr. John C. Edwards, O'Fallon, is reported to be ill at his home.——Dr. Mason C. Alderman, Sedalia, is seriously ill with heart disease.——The trial of Dr. Fred W. Brown, Billings, charged with performing a criminal operation, resulted in complete vindication of the defendant, March 9, when the circuit court judge gave peremptory orders to the jury to bring in a verdict of not guilty.

St. Louis

Red Cross Endowment Fund.—The St. Louis Committee on Endowment of the American Red Cross reports that $53,159.20 have been contributed of the $70,000 apportioned to the city.

Tuberculosis Commission Resigns.—The Municipal Commission on Tuberculosis resigned as a body, March 27, considering that its work had been completed with the establishment of the Robert Koch Hospital.

Fake Physician Fined.—Annibale Inverso is said to have been fined $50 and costs on each of three charges of practicing medicine without a license, March 23. In default of payment of fine he was committed to jail.

Intern Examination.—At the meeting of the City Hospital Board, March 29, Hospital Commissioner Morfit announced that 94 out of the 106 applicants had passed the examination recently conducted for internes in the City Hospital.

Personal.—Dr. Albrecht Collasowitz has returned from abroad. ——Dr. Otto A. Wall, Jr., has succeeded Dr. Albert E. Taussig as editor of the *Weekly Bulletin of the St. Louis Medical Society,* and Dr. Grandison D. Royston has been made associate editor.——Dr. Hugo M. von Starkloff is reported to be seriously ill with appendicitis at St. Anthony's Hospital.——Dr. C. W. Gould, assistant bacteriologist of St. Louis, is reported to be ill with heart disease.

MISSISSIPPI

Personal.—Dr. Vincent Bonelli, Vicksburg, has succeeded Dr. Ewing F. Howard, Vicksburg, resigned as secretary of the Warren-Claiborne County Medical Association.——Dr. B. J. Marshall, Europa, has been elected head counsel of Mississippi Woodmen.——Dr. Sherwood R. Towns, Union Church, has been elected secretary of the Jefferson County Medical Society, vice Dr. John H. Carradine, Fayette, resigned.——A nurse who attempted to shoot Dr. Robert L. Turner, Meridian, two months ago, because of a disagreement is said to have been fined $500.

Society Meetings.—Clarksdale and Six Counties Medical Society held its semi-annual meeting in Clarksdale, March 22. The following officers were elected: president, Dr. Aaron G. Everett, Friar Point; vice-presidents, for Bolivar County, Dr. F. M. Duley; for Coahoma County, Dr. William W. Stuart, Clarkesdale; for Tunica County, Dr. Daniel W. Coker, Tunica; for Quitman County, Dr. Samuel C. Cowan, Sabino; for Tallahatchie, Dr. Sylvanus W. Robinson, Pisgah; and for Sunflower County, Dr. William B. Harrison, Crawford; secretary-treasurer, Dr. Thomas W. Dye, Longwood; censor, Dr. Robert L. Mercer, Shelby; and delegates to the state association, for Bolivar County, Dr. A. M. Wynne, Merigold; alternate, Dr. Thomas D. Allen, Shaw; for Coahoma County, Dr. T. G. Hughes, Clarkesdale; alternate, Dr. E. L. Hooper; for Quitman County, Dr. Frederick M. Brougher, Belen; alternate, Dr. Cyril J. Marshall, Lambert; for Sunflower County, Dr. Richard C. Smith, Potter; alternate, Dr. W. G. Boyd; for Tallahatchie County, Dr. T. F. Clay; alternate, Dr. John A. Harris, Webb; and for Tunica County, Dr. Morris J. Alexander, Tunica; and alternate, Dr. M. L. Minor.——At the annual meeting of the Lauderdale County Medical Society, held in Meridian, Dr. James M. Guthrie was elected president; Dr. George W. Stephens, vice-president; Dr. Samuel H. Hairston, secretary-treasurer; and Dr. William W. Reynolds, delegate to the state association, all of Meridian.

NEBRASKA

Home from Abroad.—Dr. Charles C. Morrison, Omaha, has returned after several months postgraduate work in London. ——Dr. Adolph Sachs, Omaha, has returned after twenty months' study in Berlin and Vienna.

Journal Stockholders Meet.—The stockholders of the *Western Medical Review Company* met in Omaha, March 21, and elected the following directors: Drs. August F. Jonas, Frank E. Coulter, Henry F. Akin, Henry L. Burrell and Harold Gifford, all of Omaha.

State Association Meeting.—The Nebraska State Medical Association will hold its annual meeting in Omaha, May 2-4. Dr. John P. Lord has been made chairman of the committee on clinics; Dr. Louis B. Bushmann, chairman of the committee on management; and Dr. Alfred Schalek, chairman of the committee on entertainment.

NEVADA

Abortionist Sentenced.—Dr. Frederick Hugo Wichman, Reno, charged with causing the death of Mrs. Emma J. Ross by an illegal operation in October last, is said to have been found guilty, March 17, and sentenced to imprisonment for eight years in the Nevada Penitentiary. Motions for new trial and for appeal were argued and denied.

NEW YORK

Fire in State Institution.—Fire on April 2, practically destroyed the Northern New York Institution for Deaf Mutes, Malone, causing a loss of about $135,000. The 100 inmates of the institution marched out of the building without panic or injury just before an explosion occurred.

Medical Club Election.—The Utica Medical Club, at a meeting, March 16, elected Dr. Faust S. DeLong, president; Dr. Raymond L. Baker, vice-president; and Dr. Lewis B. Amsfry, secretary-treasurer. Dr. John Gromann, the president, entertained the club and delivered an address on "Chronic Urethritis."

State Board of Charities.—The board reports that the total number of persons supported by the state during 1910 in the state and reformatory institutions was 11,874. Of this number, 3,001 were discharged and 485 died, leaving on the state's hands 8,388 persons. The total value of property in these institutions is $10,303,899.

Medical Journal to be Offered for Sale.—By the will of the late Dr. William Warren Potter, Buffalo, his estate is left to Miss Margaret Bowden, his secretary and chief assistant for twenty-five years. The principal asset of the estate is the *Buffalo Medical Journal.* The will provides that the *Journal* shall first be offered for sale to the medical department of the University of Buffalo.

Celebrate Semicentenary.—On March 31, Schuyler County Medical Society gave a dinner at the Glen Springs, Watkins, in honor of the fiftieth anniversary of the graduation of two of its members, Drs. Charles D. Clawson, Montour Falls, and Gideon O. Smith, Odessa. After the dinner, Dr. Clawson gave "Reminiscences of a Student of Fifty Years Ago," Dr. Smith read a paper entitled "The Recollections of a Young Practitioner Fifty Years Ago," and the Hon. O. P. Hurd, Watkins, made an address on "The Experiences of a Patient Fifty Years Ago."

The Blackwell Memorial.—At the recent annual meeting of the Woman's Medical Society of New York State, resolutions were passed regarding the recent deaths of Drs. Elizabeth Blackwell, Hastings, England, and Emily Blackwell, New York City, who are recognized as pioneers in the study and practice of medicine, and who by their persevering efforts opened the way for other women to enter that field. The society expressed its deep respect for and appreciation of the character and work of the Drs. Blackwell, its indebtedness to them, and its earnest desire to carry forward the work so nobly begun by them.

New York City

Building for Public Health Service.—The United States Government has awarded the contract for a building to serve as quarters for assistant surgeons of the Public Health and Marine-Hospital Service, Staten Island.

Bequest to Cornell.—The late Dr. Samuel Alexander bequeathed all his surgical instruments and pathologic and anatomic preparations to Cornell University Medical Department.

Personal.—Dr. Reginald Pickett, ambulance physician of St. Vincent's Hospital, Staten Island, was thrown from the ambulance in a collision with an automobile, March 17, and was seriously injured.——Dr. Joseph P. Sheridan, diagnostician of the Queen's Borough branch of the board of health, has resigned, to take effect April 1.

Gifts to Hospitals.—Frederick W. Beinhauer who died recently, provided in his will that on the death of his wife, his real property, less specific bequests, be divided equally between the Presbyterian and German hospitals and St. John's Guild.——Alfred M. Heinsheimer has given $10,000 to the Hospital for Deformities and Joint Diseases as an endowment fund to aid in the equipment and maintenance of the institution.

Fund for Hungarian Hospital.—A new hospital for the benefit of the large Hungarian population of New York City is to be erected on the upper East Side. An option has been secured on several corners between Eightieth and Eighty-Fifth Streets and a large part of the $300,000 for the proposed structure has been subscribed. Plans have been prepared for a nine-story building of steel reinforced by concrete. It is expected that the hospital will be ready for occupancy by the fall of 1912.

Condemnation of Contaminated Food.—Acting under special orders from Health Commissioner Lederle, inspectors of the department of health began, on March 29, active enforcement of Section 46 of the sanitary code, which provides for the shielding of food from dust, dirt, flies and other contamination. The activity of the inspectors was directed especially against street vendors of candy, on whose stands were found large quantities of confectionery exposed for sale in uncovered, unprotected condition.

Gift to Hospital.—Among the many bequests to religious and charitable institutions made in the will of Mrs. Frances Swan Welles is one of $10,000 to the Presbyterian Hospital to provide a permanent fund, half the income from which is to be used to brighten the lives of the nurses in that institution and the other half to brighten the lives of the patients in the general wards. Other bequests were $5,000 to the Bryson Day Nursery and $5,000 to the Belknap Summer Home for Day Nursery Children, Far Rockaway.

Public Drinking Cups Must Go.—Believing the public drinking cup to be a carrier of infectious diseases, the Board of Health has adopted an additional section to the Sanitary Code which will make it unlawful after October 1, 1911, to have what is known as a "common drinking cup" in any public building, institution, factory, theater, school, railroad station or ferry house in the city. The health department is not recommending any special device to take the place of the drinking cup, but experiments by the department have shown that certain stock fixtures can be so arranged as to comply with the requirements of the new ordinance.

Sage Institute Out of City Charities.—The Russell Sage Institute of Pathology, which was founded in 1907 when Mrs. Sage gave $300,000 for pathological research work in connection with the hospitals and charitable institutions on Blackwell's Island, has resolved to terminate the agreement existing with the Public Charities Department and to withdraw its pathologists from the City Hospital and the City Home. Mr. Drummond, Commissioner of Charities, has asserted that the Institute of Pathology used city money without proper supervision on the part of the city; while on the other side the directors of the institute asserted that there was too much politics mixed with the administration of affairs on the island.

NORTH CAROLINA

Hospital News.—A new city hospital will soon be erected in Tarboro.——The new Rutherford Hospital was formally dedicated, March 10. Dr. Joseph Price, Philadelphia, delivered the principal address and held a clinic.——The new infirmary building of the State Normal College for Women, Greensboro, has been completed.

Personal.—The governor has reappointed Dr. Robert H. Stancell, Margarettsville, director of the State Hospital for the Insane, Raleigh, and Dr. William E. Headen, Morehead City, director of the State Hospital for Colored Insane, Goldsboro.——Dr. Isaac H. Faust, Salisbury, has given up the practice of medicine.——Dr. Francis J. Clemenger, Asheville, has been commissioned as captain of the Medical Corps of the National Guard.——Dr. Robert L. Caveness, Coleridge, has been elected president of the Siler City Loan and Trust Company.——Dr. Berte O. Edwards has been elected president of the Merchants and Farmers Bank, Landis.

Work of the Legislature.—In the last session of the legislature the following work of interest to physicians was accomplished: The bill approved by the state medical society and the State Board of Health, requiring a four years' high school course or its equivalent for candidates for medical license, passed the house but was defeated in the senate. This is the third time this measure has been defeated in the legislature.——The appropriation for the work of the new State Board of Health has been increased from $8,000 to $22,000. The board is also to receive about $4,000 as a tax on water companies, and will also save about $4,000 by the agreement of the state to print its *Bulletin* and other publications.——The county sanitary committee has been abolished, and in place thereof there has been created the county board, consisting of the chairman of the board of county commissioners, mayor of the county town, county superintendent of schools, and two physicians elected by them. The board elects the county superintendent of health who may act as quarantine officer if so desired.——State quarantine of small-pox has been abolished, but local quarantine of counties is left optional.——An act was passed creating a board of nine trustees and providing funds for the building and equipment of a state institution for the feeble-minded. Drs. Lewis B. McBrayer, Asheville; Alfred A. Kent, Lenoir; Ira M. Hardy, Washington; and Robert N. Cartwright, Fairfield, have been appointed members of the board.

NORTH DAKOTA

New Hospitals.—The Ward County Hospital controversy has been settled by turning over the hospital to a hospital association organized by the physicians and business men of Minot.——Dr. Arnt G. Anderson has established an eight-room hospital at Hillsboro.

Meeting of State Antituberculosis Association.—At the annual meeting of the North Dakota Antituberculosis Association, held in Bismarck, Dr. James Grassick, Grand Forks, delivered the annual address, giving a brief review of the work of the association for the past year. The association decided to enlarge the state tuberculosis exhibit, and accepted April 30 as Tuberculosis Sunday. It was reported that nearly 80,000 Red Cross seals were sold during the holidays. The following officers were reelected: president, Dr. James Grassick, Grand Forks; vice-presidents, Mrs. H. L. Bolley, Fargo, and Drs. Victor J. LaRose, Bismarck; Victor H. Stickney, Dickinson, and Andrew Carr, Minot; secretary, Dr. Fannie Dunn Quain, Bismarck; and treasurer, Mrs. J. E. Stevens, Grand Forks.

OHIO

New Department of State Board.—Through the efforts of Dr. Frank Warner, Columbus, the department of epidemiology has been established in cooperation with the State Board of Health for the control and prevention of epidemic diseases.

Plans for Sanatorium Accepted.—The final plans for the joint tuberculosis sanatorium to be erected by Columbiana, Stark, Mahoning, Portage and Summit Counties, have been accepted by the trustees. The sanatorium will be located on the Bixler farm near Akron.

Old Physicians Honored.—About eighty physicians of Montgomery Medical Society were present at a banquet in Dayton, given in honor of Drs. James M. Weaver, Dayton, and Samuel Souders, Dean, in celebration of the fiftieth anniversary of their medical practice. Dr. Souders was unable to attend the banquet on account of ill health. Dr. Horace Bonner was toastmaster. Dr. John S. Beck spoke on "Our Guests," and Dr. John C. Reeve, dean of the profession in Dayton, gave "The Greet of a Veteran Comrade."

Personal.—Dr. Harry D. Belt, Kenton, has sailed for Europe.——Dr. Michael A. Bartley has succeeded D. Rush Robinson, resigned, as district physician of the west side of Columbus.——Dr. Myron S. Clark has been reelected president of the board of health of Youngstown.——Dr. Arlington C. Holland, Marion, chief statistician of the state registrar of vital statistics, will, it is said, succeed Dr. Fred L. Watkins, Columbus, in that position.——Dr. W. Dallas Hoyer, health officer of Sandusky, has resigned and has been succeeded by Dr. Hiram D. Peterson.

Health Official Exonerated.—At a meeting of the board of health of Lorain, March 15, a resolution was adopted exonerating Dr. William A. Pitzele of the charges made against him by Dr. William F. Dager of connivance with local midwives. The board concluded that Dr. Pitzele was innocent of any wrongdoing, or breach of professional courtesy, and that he had done nothing deserving censure or in any way reflecting on his professional or personal integrity or honesty. The board also found that the action taken by Dr. Dager in the matter would have been fully justified had the information which he received been founded on facts.

Cincinnati

Personal.—Dr. Sigmund Wolf has been appointed physician to the Municipal Lodging House.——Dr. Clarence Bahlman has succeeded Dr. Franklin H. Lamb, resigned, as chemist and bacteriologist to the Cincinnati Board of Health.——Dr. Robert Maddox has been appointed a member of the orthopedic staff of the City Hospital.

Buildings of Contagious Group Opened.—On March 25 and 26, six new buildings of the contagious group of the Cincinnati Hospital were opened for public inspection. At a meeting of the board of hospital commissioners, last week, the specifications for the entire group of eighteen buildings were approved unanimously. These buildings are in addition to the six of the contagious group just *completed, and will cost in the* neighborhood of $1,850,000. In addition to wards for patients there will be administration building, receiving ward, nurses' dormitory, kitchen and dining room, room for women employees, operating building, power and laundry building, and *stable and garage*. The pathologic building will be five stories in height and will include a morgue, chapel and teaching department.

PENNSYLVANIA

Oppose Antivivisection Bills.—A hearing on the antivivisection bills took place before the house health and sanitation committee, representatives of the various medical schools appearing against the bills. Among these were Drs. Alfred Stengel, David Riesman and A. E. Taylor, University of Pennsylvania; Seneca Egbert and Joseph McFarland, Medico-Chirurgical; R. A. Remington, Philadelphia College of Pharmacy, and State Veterinarian, C. J. Marshall.

Governor Favors Change in Medical Bill.—Governor Tener favors reconstructing the present medical bill. The provisions of the new measure will be substantially those of the Gerberich-Wasson measure now in the committee of health and sanitation in the senate. An amendment will be proposed to the bill to definitely fix the compensation of the examining board. This board will be composed of the state commissioner of health, the state superintendent of public instruction and five others to be appointed by the governor. Of these latter, there will be one member of each branch, regular, eclectic and homeopathic. The remaining two will not be members of the same school.

Philadelphia

Gift to Hospital.—The Rush Hospital for the Treatment of Consumption has been given $5,000 by Mr. John Wanamaker for the endowment of a free bed.

Elections.—The following officers for 1911 were elected at the last meeting of the Jefferson Hospital Clinical Society: president, Dr. Hobart A. Hare; vice-president, Dr. Frederick J. Kalteyer; secretary, Dr. Elmer H. Funk; treasurer, Dr. Clarence D. Smith, and executive committee, Drs. Aller G. Ellis, P. Brooke Bland, Edward J. Klopp and Edward J. G. Beardsley.

Gifts to College of Physicians.—At the stated meeting of the College of Physicians, April 5, Dr. John B. Shober read a memoir of the late Dr. George Couvier Harlan, after which a portrait of Dr. Harlan was presented to the college on behalf of the daughter, Mrs. Harry Post Mitchell.——A portrait of Dr. James Tyson was *also presented by Dr. George A. Piersol* on behalf of the donors.——Another gift to the college was an acupuncture needle and a lancet, used by native Korean physicians.

Dr. Scott Memorial.—Ten thousand dollars has been contributed to the University of Pennsylvania to establish a memorial to the late Dr. J. Alison Scott, adjunct professor of medicine in that institution. This memorial will take the form of a fellowship for medical research. Of the interest money $200 will be spent each year to help some medical student to finish his course, while the remainder will be reinvested until the entire sum is large enough to support a physician, able to do research work.

Important Notice to Physicians.—The following postal card notice was sent to all physicians of the city from the Registration Office of the Bureau of Health:

> The Pennsylvania State Department of Health, conjointly with the Philadelphia Bureau of Health, is taking a block census of children under 2 years of age born in Philadelphia. This work will henceforth continue regularly. Where unregistered births are discovered an immediate prosecution will be instituted against the physician, midwife, institution or person found to be negligent. This notice is intended as a warning—that the law requiring the registration of all births within ten days of their occurrence will be absolutely enforced in every instance. Stillbirths must be registered both as births and deaths.

Efforts to Overturn Pure Food Laws.—An attempt to overthrow the pure food laws of the state by permitting the use of sulphur dioxid in the manufacture of candy, was disclosed in a bill presented to the legislature by Representative Edwin M. Abbott, March 30. This bill makes the second attempt within a short time to overturn the pure food laws. The first bill introduced by Senator James P. McNichol provided that saccharin might be used in "soft drinks," while the Abbott bill amends the present pure food law by allowing the use of sulphur dioxid in the manufacture of candy.

GENERAL NEWS

Association for the Study of Epilepsy.—The National Association for the Study of Epilepsy and the Care and Treatment of Epilepsy will hold its annual meeting in St. Louis, June 16, under the auspices of the St. Louis Medical Society. This date has been set so that members may attend the Denver meeting of the American Medico-Psychological Association, and still reach Los Angeles in ample time for the meeting of the American Medical Association.

Threatens Marine Hospital Surgeon.—The surgeon general of the Public Health and Marine-Hospital Service has received a report from Surgeon Henry D. Geddings, on duty at Naples, to the effect that his life has been threatened because of his activity in the cholera situation. Geddings has received anonymous letters threatening his life and has been pelted with vegetables and decayed fruit. The situation became so disagreeable that the authorities of Naples have furnished him with a guard.

Prevention of Infant Mortality.—The second annual meeting of the American Association for the Study and Prevention of Infant Mortality will be held in Chicago, November 16-18. The work of the association will be in six sections: Midwifery, Dr. Mary Sherwood, Baltimore, chairman; eugenics, Prof. H. O. Jordan, University of Virginia, chairman; public school education, Dr. Helen C. Putnam, Providence, R. I., chairman; housing, Mr. Lawrence Veiller, New York City, chairman; milk, Prof. E. O. Jordan, University of Chicago, chairman; and rural communities, Dr. Edward W. Saunders, St. Louis, chairman. Special reports will be made on the relative value of existing agencies in infant welfare work and on the work being carried on in this country, Great Britain and continental Europe in the prevention of infant mortality.

International Medical Congress.—The Seventeenth International Medical Congress will be held in London in the summer of 1913, the exact date being fixed by the permanent committee which will assemble in London, April 21 and 22, under the presidency of Dr. Frederick W. Pavy, *London. At this meeting* a list of the sections of the congress will be arranged. Any wishes or suggestions concerning the arrangement of this list may be sent, up to April 1, to the secretary of the permanent committee, Prof. H. Burger, Vondelstraat, I, Amsterdam, Holland, or to the bureau of the committee, Hugo de Grootstraat, 10, The Hague, Holland. The committee will also be glad to receive before that date, any information or suggestions regarding the organization of the congress. This is the first time any international medical congress has been organized with such broad preliminary work, and it is hoped to get out of ruts and the influence of traditions and to make the congress represent the advance of science in congresses as well as in the science for which the meeting stands. The appeal of the committee for suggestions should be heeded. Dr. John H. Musser, 1927 Chestnut Street, Philadelphia, the American member of the permanent commission, expects to attend the meeting of the commission in London and will be glad to present any suggestions made by the readers of THE JOURNAL.

FOREIGN NEWS

Sanitary Progress in Latin America.—The little island of Curaçoa, just north of the most northern point of South America, is a gateway to Porto Rico and the Panama Canal Zone; consequently it is satisfactory to learn that the colonial government has made strenuous efforts to exterminate rats. The war of extermination was instituted last year when plague appeared at the two principal ports of Venezuela to the south. Cable despatches also state that the city of Guayaquil, the main port of Ecuador on the Pacific Coast, has engaged engineers to install a new drainage and water-supply system and rebuild portions of the city to place it in first-class sanitary condition. Eight millions have been appropriated for this purpose. The way in which Buenos Aires is handling the rat question was described in these columns March 18, page

Rio de Janeiro has been transformed in the last few years so that it now ranks among the healthiest cities in the world. Oswaldo Cruz, who had charge of the sanification of Rio, is now engaged in a similar task at Para, at the request of the city of Para, which is near the mouth of the Amazon River and is the headquarters of the Brazilian rubber trade. Cruz took with him ten leading sanitarians besides an office force and seventy aids. The entire force is under contract to the state of Para and the task of sanification is now well under way. In all the reports of the progress of sanitation in Latin America there is always some reference to the "Americans" having blazed the way—it is certainly curious how the countries to the north and south of the United States unanimously restrict the term "Americans" to the people of this country. The people of the United States have never arrogated to themselves the exclusive title of "Americans," but our neighbors north and south seem to have voluntarily thus crowned us.

Deaths in the Profession Abroad.—In addition to those already mentioned in our foreign correspondence, the following eminent physicians have died recently: J. dos Santos, Viscount de Ibituruna, the Nestor of the physicians at Rio de Janeiro and long a leader in preventive medicine, president of the Brazilian Liga contra a tuberculose, formerly president of the city council and of the board of public health, aged 83.——C. van Gauwenberge, professor of gynecology and obstetrics at the university of Ghent.——At Lima, Peru, F. A. Suter, professor of surgery, aged 37. He was called to this post from Switzerland in 1908.——W. F. Sprimon of Moscow, founder in 1881 and editor of the leading Russian medical monthly, *Medizinskoe Obozrenie*.——M. Nery, professor of nervous and mental diseases at the University of Rio de Janeiro and on the editorial staff of the *Brazil Medico*.——C. A. MacMunn of Wolverhampton, Eng., well known for his physiologic research, especially the application of the spectroscope to physiology, author of "The Spectroscope in Medicine" and of other works on physiologic and pathologic chemistry, aged 58.——Arthur Frame Jackson, M.B., 1909, Cambridge and Liverpool; D.T.M., 1910, Liverpool; a young medical missionary of great promise, a member of the staff of the Presbyterian Hospital, Mukden, Manchuria, and in charge of the section of that city in which 80 per cent. of the deaths from bubonic plague have occurred, contracted that disease January 23, and in spite of injections of Yersin's serum, and all that medical science could do, died January 25, aged 26. At the memorial services held in the British Consulate General, Mukden, February 1, Hsi Liang, viceroy of Manchuria, paid the following tribute to the work and memory of Dr. Jackson:

> We have shown ourselves unworthy of the trust laid on us by our emperor; we have allowed a dire pestilence to overwhelm the sacred capital. His majesty the king of Great Britain shows sympathy with every country when calamity overtakes them. His subject, Dr. Jackson, moved by his sovereign's spirit, and with the heart of the Savior, who gave his life to deliver the world, responded nobly when we asked him to help our country in its need. He went forth to help us in our fight; daily, where the pestilence lay thickest, midst the groans of the dying, he struggled to cure the stricken, to find medicine to stay the evil.
>
> Worn by his efforts, the pestilence seized on him, and took him from us, long ere his time. Our sorrow is beyond all measure, our grief too deep for words. Dr. Jackson was a young man of high education and great natural ability. He came to Manchuria with the intention of spreading medical knowledge and thus conveying untold blessing on the eastern peoples. In pursuit of his ideal he was cut down. The Presbyterian mission has lost a worker of great promise, the Chinese government a man who gave his life in his desire to help them.
>
> O, spirit of Dr. Jackson, we pray you intercede for the 20,000,000 people in Manchuria and ask the Lord of heaven to take away this pestilence, so that we may once more lay our heads in peace on our pillows. In life you were brave, in death you are an exalted spirit. Noble spirit, who sacrificed your life for us, help us still and look down in kindness on us all.

LONDON LETTER

(From Our Regular Correspondent)

London, March 25, 1911.

A Novel Doctrine of Ventilation

At the Institution of Heating and Ventilating Engineers, Mr. Leonard Hill, the eminent physiologist, described a remarkable series of experiments which he and his staff at the London Hospital have made, and which have led to a doctrine of ventilation that is a complete revolution. He began by referring to evidence which he gave before a royal commission on the conditions of weaving sheds. In these sheds there must be a high degree of humidity. The health authorities insist that the percentage of carbon dioxid must not rise above the usual amount allowed, say 10 parts in 10,000, but the work people want the sheds to be shut up and "stew in their own juice," so to speak. They wanted to get the requisite humidity from their own breaths rather than from admission of warm vapor. Now, curiously, the regulations, while forbidding more than a certain amount of carbon dioxid, did not prescribe any limitation of the wet-bulb temperature. But Mr. Hill found that carbon dioxid does not do any harm whatever, while a wet-bulb temperature of 75 degrees is very bad and ought not to be tolerated in any factory. All the current teaching of the hygiene of ventilation runs on the chemical purity of the air; but according to Mr. Hill the essential thing in ventilation is heat, not chemical purity. It does not matter if there is 1 per cent. more carbon dioxid and 1 per cent. less of oxygen. In the worst ventilated rooms there is not 1 per cent. less of oxygen. The only effect of an excess of carbon dioxid is to make one breathe a little more deeply. A much higher amount has to be attained to have any toxic effect. As to organic impurities derived from respiration, there is no physiologic evidence of their toxicity or that they are of any importance except as an indicator of the number of bacteria in air. Chemical purity of the air is desirable in order to diminish the chance of infection, but in halls and theaters there is very little chance of preventing infection from persons who sneeze or cough out thousands of bacteria. Even when a man is speaking, he is spraying out bacteria in front of him. The really important thing is immunity to such bacteria. In the case of water-borne disease we can prevent infection but not in the case of air-borne disease. The way to keep air best from the physiologic point of view is shown by the following experiment performed by Hill at the London Hospital: Into a small chamber which holds about 3 cubic meters he put eight students and sealed them up. They got into the chamber joking and lively. At the end of half an hour the wet-bulb temperature had risen to 85 F. They had ceased to laugh and joke and their faces were congested. The carbon dioxid had gone up 4 or 5 per cent. and the oxygen down to a corresponding extent. Hill then put on three electric fans and merely whirled the air about just as it was. The effect was like magic; the students at once felt perfectly comfortable, but immediately the fans stopped they felt as bad as ever. In another experiment, a man in the chamber breathed through a tin of soda lime so that he got no carbon dioxid. When the wet-bulb temperature rose to 85 degrees sweating and discomfort came on, just as in the first experiment, and when the fans were turned on he got the same relief. Then a bag containing carbon dioxid was connected with the chamber and enough of the gas was admitted to raise the percentage of carbon dioxid to 2 per cent. The man in the chamber felt no ill effects whatever and even did not know that the gas had been admitted, but he was observed to breathe more rapidly. These experiments, Hill asserts, show that all the discomfort from breathing air in a confined space is due to heat and moisture and not to carbon dioxid. Even after forty-five minutes in the chamber there were no after-effects such as headache. In a crowded room, the air is at the body temperature and there is no circulation; therefore it becomes saturated with moisture and we have no means left of keeping the body temperature down. We cannot radiate heat because we are of the same temperature. We cannot lose heat by evaporation because the air is entangled among our bodies and cannot get away. Then the heat-regulating mechanism is strained and in order to keep the body temperature down the heart has to beat very much faster and we feel miserable, but as soon as the air is made to move relief is given. Mr. Leonard Hill concludes, therefore, that when it is not possible to keep the air of a building up to the chemical standard of purity laid down in the text-books the proper course is to keep the air moving. In weaving sheds the wet-bulb temperature must be kept below 75 F. There are mines in Cornwall in which the wet-bulb temperature is often up to 90 F. and the men do not do an hour's work in the day; they drink enormously and pour the sweat out of their boots. The open air treatment that is so much talked about is not, he declares, a matter of fresh air, it is merely the constant cooling of the body by the circulation of air which makes us eat more and be more active. This leads to a general strengthening of the body because the blood is not only circulated by the heart but by every muscle in the body. There cannot be efficient circulation without constant movement and activity. If there is constant cooling by ventilation then a person is kept more active and the general health is improved.

Sir Francis Galton's Bequest for the Study of Eugenics

Sir Francis Galton, notice of whose death appeared in The Journal, February 4, p. 359, made a remarkable bequest of residuary estate, which is expected to amount to $325,000, for the advancement of eugenics, the science of race improvement, which he initiated in 1901. The money is to be used to endow a "Galton Professorship of Eugenics" at the University of London, with a laboratory and a library attached thereto. According to the words of the testament: "It shall be the duty of the professor to pursue the study and further the knowledge of national eugenics, that is, of agencies under social control that may improve or impair the racial faculties of future generations physically and mentally." The professor will be expected to collect material bearing on eugenics, to provide, under appropriate restrictions, information to private individuals and public authorities concerning the laws of inheritance in man; to urge the conclusions as to social conduct which follow from such laws, and to extend the knowledge of eugenics by instruction, publications, lectures and experimental or observational work. Sir Francis Galton left property to the gross value of $575,000. Thus, he left more than half of his estate for the advancement of the subject he had so much at heart. He also expressed the desire that the first holder of the chair should be Prof. Karl Pearson, the well-known protagonist of biometric methods, who shall have liberty to continue his biometric laboratory at University College.

The Small-Pox Epidemic

The small-pox epidemic in London appears to be at an end. No fresh cases have been reported for a fortnight. An outbreak of small-pox occurred at Bury in Lancashire, and there are now twenty-five patients in hospital. The outbreak has been traced to a mill in which all the affected people were employed. The mill has been closed in consequence of the operatives declining to work. The warps and weft in several looms have been ordered to be destroyed and about 3,000 finished pieces of cloth have been disinfected.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, Feb. 13, 1911.

Effect of Tropical Climate on White Men

For all time, the discussion of any phase of the general topic, the effect of the tropics on the white man, doubtless will attract more or less attention. This effect, which is at once apparently so evident, and yet at the same time so difficult to prove absolutely, is bound to give rise to a great deal of scientific, semiscientific and popular discussion. That one does undergo a change in himself after coming to tropical Oriental countries is universally admitted. But whether this change is for good or bad in many cases might be open to doubt. A great deal depends on the personal element, one's former habits and environments and the habits, environments and associations which he falls into or acquires in the hot climate. For instance, for many Americans who are given to too much of the so-called American hustle, a temporary residence in the tropics is likely to prove directly beneficial. On first arriving in the tropics from a temperate climate a man finds himself burdened with a great desire for sleep—long hours of sleep at night and a nap after lunch. Any strenuous exercise quickly exhausts him, and tennis is very often the limit of his powers of exertion. This condition does not obtain usually more than three or four months, and he feels himself normal again, capable of much more exercise, and work ceases to be a burden, although in the meantime he has probably adjusted his activities to a slower pace.

The agents which are responsible for this effect, and for the more obscure and serious effects believed by many to be experienced by persons from temperate climates who remain in the tropics for a long time, are still unknown. The intense heat, the prolonged hot season, the glare of the tropical sun and the actinic rays of the tropical sun all have been indicted. Recent physical experiments made at the Bureau of Science, Manila, tend to rule out the actinic rays. In regard to the actinic rays, there have been made also in the U. S. Army in the Philippines, by the Tropical Diseases Board, a series of observations on soldiers wearing orange-red underwear. Cloth of this color had been supposed to be relatively impervious to the actinic rays of the sun. Hence, people wearing orange-red clothing would be almost immune to this supposedly injurious tropical agent. The following report has been made:

"During the quarter, the tests of the orange-red underclothing, which have been under way for over a year, were completed, and the work of compiling the great amount of data obtained from these observations was carried out by Captain James D. Phalen of the Medical Corps, who has submitted an extensive special report on the subject. A summary of the work is as follows:

"The test of the orange-red underwear and hat linings was undertaken as a result of recommendations by the Inspector-General of the Army. The garments were prepared at the Philadelphia depot of the Quartermaster Department, and were of a deep orange-red color. The shirts averaged one-fifth of an ounce heavier than the white ones worn by the controls. The orange-red drawers were of a different type from the white ones and averaged 1 1/5 ounces heavier. The garments faded materially on washing, especially if exposed to the sun while drying. However, the inner surface retained much of the dye, and it is not thought that the fading was so great as to destroy the value of the tests.

"It had been intended to equip 1,000 men with the special underwear and an equal number of controls with white, but, owing to inability to fit sufficient men from the 5,000 suits furnished, it was found impossible to equip over 500 with the orange-red garments. The tests were carried out under the immediate supervision of the following medical officers at the posts shown after their names: Major C. C. Collins, Fort McKinley, Rizal, P. I.; First Lieutenant C. L. McKinney, Camp Stotsenburg, P. I.; First Lieutenant H. A. Philips, Camp Jossman, Guimaras, P. I.; First Lieutenant C. D. Cowles, Jr., Zamboanga, Mindanao, P. I.

"The men wearing the special clothing and the controls wearing the white were taken from the same companies, which were equally divided in such a way as to make the two groups as nearly as possible equal in physique. Those with long tropical service, or who were exceptionally weak, were excluded.

"The experiment was kept up during the calendar year of 1909, and a summary of the results are as follows:

"(1) Weight:—There was a loss of weight during the year in both groups of men, more marked in the mid-year (hot season) weighings, a certain amount of the mid-year loss being made up by the end of December. The loss of weight at the mid-year observations was greater by an average of 1 pound for the orange-red group men than for the control group. At the end of the period of observation there was no difference of weight in the two groups.

"(2) Blood Examinations:—The result in both groups agreed in character if not in degree with those of Captain Wickline of the Medical Corps, showing an increase above normal in the number of red cells and a decrease in the percentage of hemoglobin, the hemoglobin index being necessarily still more diminished. The increase of red cells and the decrease of hemoglobin were both more marked in the orange-red group than in the controls. Both this change and the greater loss in weight, referred to above as the lower blood-pressure mentioned below, may have been due to increased perspiration on the part of the orange group during the hot season.

"(3) Blood-Pressure:—The blood-pressure of both groups fell during the hot season, the fall being slightly more marked in the orange-red group. In December the pressure in both groups returned to practically the original point.

"(4) Pulse, Temperature and Respiration:—These were taken after drill or other exercises, 8,000 observations being made. Averages for 1,500 observations are shown in the following table:

Orange-red group..........	98.792	91.2	22.3
White group.	98.780	90.9	21.3

"It will be seen that each is higher for the orange-red group than for the controls, but the differences are very slight.

"(5) Comparative:—Sick reports showed insignificant differences. The admissions per 1,000 and the days lost per 1,000 were, respectively, 508 and 3.526 for the special group, and 478 and 3.522 for the white group. The admissions per 1,000 for heat exhaustion were higher for the orange-red group, twenty-seven as compared with twenty-one for the controls.

"(6) Strength Tests:—Strength tests on men from the two groups showed nothing of value.

"(7) Symptoms Referable to Climate:—The two groups suffered about equally from these except as regards excessive perspiration, which was much more complained of by the men of the orange-red group.

"(8) Impressions of the Wearer:—Sixteen men preferred the orange-red garments, fifty-four had no choice between the colors, and the remainder, nearly 400, expressed an opinion adverse to the colored underwear. Fifty said it was hotter and 104 others stated that it caused more profuse perspiration. No organization commander saw any benefit from its use, and of sixteen officers who used it for a time, only one expressed approval.

"(9) Photographic Experiments:—Experiments showed that the campaign hat was as impervious to the rays affecting the photographic plate, without the orange lining as it was with it. The lining added materially to the opacity of the khaki cap. The differences in penetrability by actinic rays between a light skin and a dark Filipino were slight, and were entirely neutralized by one layer of khaki uniform cloth. The pigment of the darkest skin was found nowhere nearly so protective as was the orange-red garment.

"(10) Temperature Experiments:—Extensive experiments, both on and off the body, showed that, when exposed to the sun, the temperature was greater beneath the orange-red material than it was beneath similar white material. The same was found to be true when both materials were overlaid by khaki cloth.

"(11) Moist Heat Experiments:—These were carried out at Los Banos in a room ranging from 90 to 98 F. and with the atmosphere saturated with moisture. Men remaining four hours in this room lost greatly in weight and had a marked rise in temperature, with acceleration of pulse and respiration and fall in blood-pressure.

"From the results of the whole test and the experiments the conclusion was reached that the physiologic effects of the climate in the Philippines can be and probably are produced by moist heat without the aid of the sun's actinic rays, and no evidence was found that the sun's rays alone could or did produce these effects. On the contrary, the test underclothing added materially to the burden of heat which the system was compelled to endure and which is probably the chief cause of tropical deterioration. Even if the actinic rays have any influence whatever on the system, it is believed that they are sufficiently excluded by the khaki uniform and the campaign hat."

PARIS LETTER

(From Our Regular Correspondent)

Paris, March 24, 1911.

Statistics of Cancer

Dr. Jacques Bertillon, of the service of municipal statistics of Paris, on March 24 made an interesting communication on the statistics of cancer to the Académie de médecine. Drawing his material from the sanitary statistics of the communes published within the last three years by the interior department, he showed that it was easy to mark out on a map of France the region where cancer is frequent in the country and that where it is rare. If one draws a line from Caen to Angers, another from Angers to Dijon, and a third from Dijon to Mézières, in the quadrilateral formed by these three lines and the northern frontier are included all the departments which are most affected by cancer. Outside of this quadrilateral, on the other hand, except for La Vendée and l'Isère, are the departments where cancer is a third or a fourth as frequent. This fatal quadrilateral corresponds quite closely to the chalky basin of which Paris is the center. On the southwest, one may trace another quadrilateral as much exempt as the other is affected, by drawing a line from La Rochelle to the Rhône to the south of Lyons. The quadrilateral formed by this line, the Rhône, the Pyrénées and the two seas does not contain a single department where cancer is notably frequent. These statistics concern only the communes having less than 5.000 inhabitants, that is to say, the country; nevertheless, the distribution of cancer in French cities is identical with its distribution in the country.

In general, cancer is more frequent in the northern countries of Europe (England 91 deaths per year per 100,000 inhabitants, Norway 100, the Netherlands 101) than in the center of Europe (Prussia 71, Austria 78, France 76) and much more rare in the countries bordering on the Mediterranean (Spain 48, Italy 61, European population of Algeria 32). Its frequency, however, is increasing in all countries without exception. In England it has almost trebled within fifty years. The statistics of the other countries do not go back so far, but show at least as rapid an increase. The statistics of Paris show that cancer is not increasing in subjects under 55. Cancers of the stomach and the alimentary canal in general are increasing, but not cancers of the breast or of the genital organs. Is this state of things to be attributed to our diet? This is a point which cannot be answered. At all events, cancer is at present one of the most cruel scourges of humanity. In England it causes almost as many deaths (34,053 in 1909) as pulmonary tuberculosis (38,639). In France it caused 30,124 deaths in 1908.

The Statistics of the Public First-Aid Service

The public first-aid service of the prefecture of police has just compiled the statistics of the work done during 1910. The first-aid pavilion established on the borders of the Seine received 321 persons (247 men and 74 women) who were rescued from the river; of these three were not revived; 132 had thrown themselves into the water intentionally. In the first-aid stations of Paris 268 wounded and 12 sick persons were cared for. In the suburbs 78 wounded and 17 sick were cared for. The litters of the various stations of the arrondissements were used 661 times. The ambulances installed at the time of the ceremonies and public celebrations received 302 persons, 120 at the national festival, 62 during carnival.

Personal

Dr. Séverin Arloing, professor of experimental and comparative medicine at the Faculté de médecine de Lyon, and director of the veterinary school of that city, has just died suddenly. He was a correspondent of the Académie des sciences and a national associate of the Académie de médecine de Paris. His works on comparative pathology, some written by himself alone, some in collaboration with M. Chauveau, brought him a great reputation. In his latter years he devoted himself especially to research on tuberculosis.

Dr. Charles Debierre, professor of anatomy at the Faculté de médecine de Lille, has just been elected senator.

Measures Against Depopulation in Belgium

Serious inquietude is beginning to be felt in Belgium over the constant diminution of the birth-rate, which has been going on for some years. A bill has recently been proposed to punish by imprisonment of from one to three years, physicians, midwives and pharmacists who recommend means of abortion; also, to punish by imprisonment of from six months to three years and a fine of from $40 to $600 (200 to 3,000 francs) anyone who shall sell, put on sale or even privately offer drugs, instruments or objects intended to produce abortion, whether the attempt be effective or not.

Diminution of the Number of Abandoned Infants

According to the statistics communicated by M. Mesureur, director of the public charities (Assistance Publique) of Paris, the number of abandoned infants has diminished considerably, especially the number of abandoned infants from 8 to 15 days old. There were 1,500 such infants abandoned in 1900 and 1901; 1,300 in 1905, 1,100 in 1907 and 1908, and 1,000 in 1909, or a diminution of a third in ten years.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, March 17, 1911.

Personal

Dr. Seydel, extraordinary professor of legal medicine in Königsberg, celebrated the golden jubilee of his doctorate March 2.

Professor von Angerer, the body physician of the prince regent of Bavaria, was granted, on the occasion of the ninetieth birthday of the latter, a hereditary title of nobility.

Centennial of the University of Breslau

In August of this year the centennial of the University of Breslau occurs. In view of this circumstance, Dr. Paul Schottländer, a son of the well known publisher in Breslau, has contributed $62,500 (250,000 marks) for the aid of students and assistants of the Breslau university who are making tours for the purpose of investigation.

Prize Offered for Essay

A newspaper appearing in Frankfort called *Die Umschau* has offered a prize of $300 (1.200 marks) for the best work on the question "What do the inferior elements of the race cost the State and Society?"

Proposal to Establish a Department of Psychiatry in the Imperial Health Office

The well known psychiatrist, Professor Sommer of Giessen, has presented a petition to the Reichstag asking for the foundation of a department of psychiatry in the Imperial Health Office. The institution is to consist of a department for statistics and records of institutions, a department for clinical and forensic psychiatry, and a department for heredity and mental hygiene. Both the committee in charge of the petition and the government have characterized the plan as impracticable and so the proposition was merely referred to the imperial chancellor without comment.

Prize Articles on the Early Clinical Diagnosis of Cancer

The German central committee for cancer research has awarded prizes of $250, $125 and $75 (1,000, 500 and 300 marks) for the three best articles on the early diagnosis of cancer by clinical means which are suitable for distribution as circulars to practitioners. The prizes have been given in this order: Dr. Fischer-Defoy of Quedlinburg, Prof. Karewski, the well known surgeon of Berlin, and Dr. Hollmann of Solingen.

Discussions of the Reichstag Committee on the Antiquackery Bill

The further proceedings of the committee on the third section of this bill, namely, the forbidding of treatment by means of mystical processes, have increased the number of remarkable statements on the part of the conservatives and members of the center group on the value of the mystic methods of treatment. One conservative declared on the ground of thirty years' experience, that the so-called incantations (*Besprechen*) are of value for human beings as well as for animals. There occurred in connection with it a reflex action on the nervous system of the person who used the treatment. He had himself seen cases in which men who used incantations on animals, were themselves made to vomit. In his view there was a secret relation between the conjurer and the conjured, and there were secrets in nature which science so far is unable to explain. A member of the center group emphasized that the limits between faith and superstition were so difficult to draw that it is dangerous to attempt to define them. Naturally these grotesque views are held up to ridicule in the papers, and this has had the favorable effect that the representatives of the conservatives and of the central party are more reserved in their expressions. It is to be hoped that the passage of the law against quackery will be promoted thereby.

Proposed Settlement of the Insurance Physician Question

The committee of the Reichstag which has the new insurance legislation under consideration, has, after much debate, reached a determination of the relations between physicians and the Krankenkassen, the most favorable to physicians of any that have so far been made. Whether the committee's report will be accepted by the house, remains to be seen. The most important paragraphs are as follows:

The relations between the Krankenkassen and the physicians shall be determined by a written contract. The Kasse (sick benefit club) may, except in urgent cases, refuse to pay other physicians. So long as it does not distinctly increase the burden of the club, it shall give its members free choice of at least two physicians. If the insured will pay the extra cost he shall have the right to choose among the physicians appointed by the clubs. The club may, however, decide that the patient can change his physician during the business year, or during the treatment of the same insurance case, only with the permission of the management. If the care of the sick by any sick benefit club is seriously menaced by the fact that the club cannot make a contract with a sufficient number of physicians or because the physicians do not keep their contract, the chief insurance officer may empower the sick benefit club to pay cash instead of furnishing nursing or medical care, to the extent of two-thirds of the average amount of their legal fund for sickness. The chief insurance office may at the same time determine: 1. How the condition of the person who is to receive the service shall be evidenced otherwise than through a physician's certificate. 2. That the club may continue its services as long as satisfactory evidence is furnished or withhold them until such evidence is provided. 3. That the club's duty to furnish service shall lapse if no sufficient evidence is brought within one year after the occasion for service arises. 4. That the club may send those who need medical care to a hospital even if the conditions of Section 199 (Par. 2) are not fulfilled. The club may appeal from the decision of the insurance office to the superior government officers. Section 381 permits the management to provide hospital treatment only through certain hospitals. Certain hospitals, especially those devoted to charity, may be excluded only for important reasons. Section 382 provides: If the hospital or medical treatment provided by any Krankenkasse is insufficient, the chief insurance office may direct that these services shall be furnished by other physicians or hospitals. Section 383 directs that when the Krankenkasse does not obey this order the chief insurance office may provide what is necessary at the expense of the club.

Campaign Against Sensationalism in the Press

The energetic efforts of many people to repress obscenity in language and pictures has been happily extended to the suppression of exaggerated sensational news. The Verband der rheinisch-westfälischen Presse has published an announcement in which the tendency of many newspapers to provide the public sensational news is criticized and reform emphatically urged. The reports of sensational court trials should be condensed to the extreme, as experience shows that unstable minds are easily prompted to the commission of similar crimes by reading such news. The same is true with regard to accounts of crimes, especially those of a sexual nature. Further care should be taken to avoid the collection of items regarding crime in a single number, so that the reader may not lose the sense of the detestableness of such things, and especially that the idea may not be aroused in the mind of the young that deeds so common are inevitable.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, March 13, 1911.

Increase of Rhinoscleroma in Hungary

Acting on a suggestion thrown out at the last international medical congress in Budapest, a committee for the investigation of rhinoscleroma has been informally constituted in Hungary, and already it has found thirty-seven fresh cases, some of which have been reported on previously. At present it is not yet possible to state whether actual infection is present. Therefore steps have been taken to keep the known patients on a list. The only reliable treatment is surgical: excision of the scleromatous tissues, with subsequent packing of the resulting nasal cavities. The disease, at least in this part of Europe, affects chiefly young and otherwise healthy persons, and does not incapacitate them seriously except when the entire breathing through the nose is stopped.

A State Institution for Infants and Mothers

In compliance with a generous wish of the old emperor, who is extremely fond of children, a large amount of money which had been originally intended for public expenditure has been turned to charitable purposes, especially for the erection of a large institution for the care of infants and for the instruction of mothers. The emperor himself has consented to accept the protectorship of the institute. The plan is to combine the following institutions: a postgraduate school for pediatricians, a school for special infants' nurses, a mothers' school and a school for children with moral and psychic defects, besides a consulting department for diseased and healthy infants. Each district hospital will be invited to send two nurses to the nurses' school, where they will remain one-fourth to one-half year and will be instructed in all subjects pertaining to the care of infants, in health and disease.

Thus in a couple of years a large number of fully trained children's nurses will be available all over the country. Furthermore, trained midwives will be received as pupils in these classes. They will be the chief aid of the doctors in the country, where mothers so often rely on the counsel of the "wise women" in regard to the feeding of babies. It is hoped that they will also be a useful means of propagating breast-feeding. Also the matrons and nurses of orphans' institutes and foundlings' homes will be invited to attend these classes. Physicians desiring to become eligible to the directorship of similar institutions in the country will find opportunity to learn the duties of such a post. Mothers, as well as grown-up girls, will be invited to become pupils in the mothers' classes. They will learn the elementary principles of the practical care of children. They will come into contact with children and babies and mothers and thus will be prepared for duties which they might be called on to fulfil any day. Physicians and teachers will be in permanent attendance on this mother's counsel department. The school for defective children aims chiefly at making these individuals as capable as possible for earning part or whole of their living. At the same time, nurses who wish to take up this branch of their occupation will be able to spend a great part of the day with such persons.

It will be possible to train twenty nurses yearly as special nurses for defective children, forty hospital nurses for children, and as many midwives, while forty infants and twenty older children will be accommodated for periods of six weeks each. Thus about 500 children a year will pass through the hands of the pupils in the institution. A number of destitute mothers will be made able to earn their living as competent nurses, poor women will receive free advice for their babies, and a few hundred children will be under control, so that their lives will have better chances. And besides, the advantages offered to members of the medical profession are also very considerable.

Association News

EASTERN RATES

One Fare and a Half Granted on the Los Angeles Trip East of Chicago

In previous announcements about the Los Angeles Session, it was stated that the eastern railroad rates had not been decided. We are now able to announce that a rate of one fare and a half has been granted for the round-trip from points in the Central, Eastern and New England Passenger associations' territory to Chicago and return. The rate from Chicago to Los Angeles and return is $62.50, with $15.00 additional if one returns by one of the northern routes. Full information about rates, hotels, routes, trains, parties, etc., has been given in THE JOURNAL during the past weeks and will be repeated May 13 in the special illustrated number about Los Angeles.

No Program of Section on Dermatology

To the Editor:—The executive committee and the officers of the Section on Dermatology authorize its secretary to notify you of the postponement of the Section program and meeting for one year and that proper announcement be officially made by publication in THE JOURNAL. The action was taken at a meeting of the committee and officers of the Section in New York City, December 28, this action being the outcome of an insufficient number of papers. From eighty invitations issued requesting papers which were sent out in October only five papers were pledged, two being from men on the Pacific Coast.

H. R. VARNEY, Detroit, Secretary.

Miscellany

The Queer Things That Men Eat.—The primitive races of mankind eat many things that seem strange and repulsive to us, though not more so than some of our favorite dainties appear to them. Quoting from the circular of the Dresden Hygiene Exhibition, the *Scientific American* (March 11, 1911) says: At the end of the rainy season the Bushmen of South Africa go foraging, taking with them their wives and children and most of their earthly possessions. The men hunt, using arrows tipped with a poison which appears to be harmless when taken into the stomach. (The South American Indians assert that the curare which they use for this purpose makes the flesh of the game more digestible.) While the men hunt, the women dig edible roots with sharpened sticks. Caterpillars are collected, killed by crushing their heads and carefully packed in grass for future use. The aborigines of Australia live largely on the seeds of many species of grasses, for each of which they have a distinctive name. They also eat the seeds of various palms, many roots and bulbs and the gum exuded by trees. A sort of bread is made of the injua root, and a gruel of karanga seeds. The animal food of the Australians includes ants, caterpillars, cicadas and many other insects. A favorite dish, called tuinamba, is composed of pupa cases. The tent-like coverings which the psylla larvæ infesting the eucalyptus make for themselves out of the sweet and glutinous exudations of the leaves, and their own secretions, are dilligently collected and form a dainty which resembles manna and is called paralja. Another delicacy is the flesh of snakes which, with the exception of the liver, is too dry and tasteless to appeal to civilized palates.

The Physician and Public Health.—At all times, from the dawn of history, the highest function of the physician has been to guard those who entrust themselves to his care against the enemies of health, whether these come in the form of licentiousness, dissipation or disease, and for this service, mankind has always been willing to return a good compensation in both money and esteem. No man has ever been held in higher esteem in the world than he who could protect against impediments to health, who could ward off death when disease had broken through the lines of protection, and who could give relief from pain and disquietude. The world has bowed before him and even kings have honored him.—L. F. Flick, in *Interstate Medical Journal.*

"Stigma of Mentality."—A physician of Wisconsin, in sending an advertisement, part of which is reproduced below, writes: "I enclose a serio-comic but seriously intended advertisement that appeared in a local paper. It must be hard for some people to live under the 'stigma of mentality,' but it is indeed gratifying that there is an institution offering relief from this besetting sin."

> *This institution was established to supply* a public demand for a place where one could go without the stigma of mentality and receive treatment for those conditions requiring Physical correction. Open all the year.
> Physicians in Charge.

Rescuing the Baby.—In Chicago recently a woman adopted a clever expedient for saving her baby from burning when her dwelling caught fire. Awakened by the fire in her burning home, she quickly bundled her baby in pillows and blankets and dropped it from a second story window to the ground, a distance of nearly 20 feet. The child was uninjured.

Dropping the babe, well bundled in pillows and blankets, to the ground.—Courtesy of *Popular Mechanics.*

Marriages

J. M. HODGES, M.D., to Miss Frances McNeff, both of Detroit, March 20.

WALTER C. BROWNING, M.D., to Miss Anna Garrett, both of Philadelphia, recently.

ARTHUR J. SOMERS, M.D., to Miss Elizabeth Gerding, both of Portal, N. D., March 13.

HENRY B. TRIGG, M.D., Fort Worth, Tex., to Miss Nellie Roscoe Day of Rhome, Tex., March 22.

ERNEST ALBRECHT VICTORS, M.D., to Mrs. Nellie Temple Collier, both of San Francisco, March 17.

ELIOT ROUND CLARK, M.D., Baltimore, to Miss Eleanor Acheson Linton of Washington, Pa., March 21.

HOWARD LEON JAMESON, M.D., Philadelphia, to Miss Eunice Ostrum of East Mauch Chunk, Pa., January 14.

JOHN VANDOREN YOUNG, M.D., to Miss Rose Essie Kirkwood, both of New York City, at Passaic, N. J., March 16.

LEROY EDSON DOOLITTLE, M.D., Newberg, Ore., to Miss Bessie Kent of Duluth, Minn., at Spokane, Wash., March 20.

FREDERICK WILLIAM MAYER, M.D., St. Paul, Minn., to Miss Elsa Gertrude Hofman, at Jersey City, N. J., March 15.

ERNEST GEORGE BUTT, M.D., to Miss Olive May Vandruff, both of Redondo Beach, Cal., at Los Angeles, March 15.

J. RUSSELL VERBRYCKE, JR., M.D., Washington, D. C., to Miss Sophie English Barnes, at Washington, February 28.

Deaths

Edward Fitch Cushing, M.D. *cum laude*, Harvard Medical School, 1888; a member of the Ohio State Medical Association; died in Lakeside Hospital, Cleveland, March 23, ten days after an operation for the relief of intestinal obstruction, aged 48. After his graduation, Dr. Cushing served for three years on the resident staff of the Massachusetts General Hospital, and later was an intern in the Boston Lying-In Hospital, and the New York Maternity. After a year's study abroad he entered practice in Cleveland and became professor of pediatrics in the Medical Department of Western Reserve University, in the reorganization of which he was actively interested. He was a member of the Cleveland Board of Health, and one of the founders of the new Babies Dispensary and Hospital. He also reorganized at his own expense the *Cleveland Medical Journal* Company, of which he was president.

George Abbott, M.D. University of Buffalo, N. Y., 1852; a member of the Medical Society of the State of New York; vice-president and president of the Erie County Medical Society from 1864 to 1866; surgeon of the Fifty-Seventh Infantry N. G. S. N. Y. in 1854; colonel of the Ninety-Eighth New York Volunteer Infantry during the Civil War; died at his home in Hamburg, March 27, aged 84.

Jacob R. Spangler, M.D. Jefferson Medical College, 1874; a member of the Medical Society of the State of Pennsylvania; city physician of York in 1881, later a member of the city board of health, and for two terms a member of the school board; died at his home, March 21, from pneumonia, aged 60. At a special meeting of the York County Medical Society, March 22, action was taken on the death of Dr. Spangler.

James William Dodd Hancock, M.D. Long Island College Hospital, Brooklyn, 1898; of Brooklyn; a member of the Medical Society of the State of New York; assistant surgeon to the ear, nose and throat department of the Williamsburg Hospital and the Brooklyn Eye and Ear Hospital; who was injured in an automobile accident near Jamaica, March 17, died in St. Mary's Hospital, March 22, aged 40.

Silas Springer Tam, M.D. University of Mobile, Alabama, 1894; formerly a member of the American Medical Association; a member of the Medical Association of the State of Alabama; local surgeon for the Mobile, Jackson and Kansas City railroad for several years; died at his home in Mobile, March 18, some weeks after an appendicitis operation, aged 39.

William Edward Hibbard, M.D. New York University, New York City, 1889; a member of the American Medical Association, and American Academy of Ophthalmology and Otolaryngology; formerly of Providence, R. I.; a specialist on diseases of the eye and ear; died in his home in Pasadena, Cal., March 16, from the effects of burns received accidentally, aged 45.

Charles More Stewart, M.D. Trinity Medical College, Toronto, 1897; M.R.C.S., England, 1902; an ear, nose and throat specialist of Toronto; for a time superintendent of the Ottawa General Hospital; while riding in Toronto, March 25, was thrown from his horse in front of a street car and instantly killed, aged 38.

William Clarkson Hastings, M.D. Pulte Medical College Cincinnati, 1888; a member of the American Medical Association; formerly a resident of Portland, Ind., and first superintendent of schools of that place; died at his home in Seattle, Wash., March 18, from heart disease, aged 58.

Isaac Smith Cramer, M.D. College of Physicians and Surgeons, New York City, 1854; a member of the Medical Society of New Jersey; and treasurer of the Hunterdon County Medical Society; and surrogate of the county in 1889; died at his home in Flemington, March 27, from heart disease, aged 77.

Henry Frederick Klenke, M.D. New York University, New York City, 1892; for several years surgeon of the New Haven (Conn.) fire department, and school physician; formerly captain in the Governor's Foot Guards; died in the New Haven Hospital, March 22, from acute nephritis, aged 43.

Frank Darwin Smith, M.D. Missouri Medical College, St. Louis, 1880; a member of the Ohio State Medical Association; a member of the staff of Engleside Hospital, Canton; died at his home in Hartville, O., March 13, from occlusion of the coronary artery due to atheroma, aged 57.

Fred W. Slocum, M.D. Syracuse (N. Y.) University, 1882; a member of the American Medical Association and Syracuse Academy of Medicine; for many years a member of the Syracuse pension examining board; died at his home in Camillus, N. Y., March 16, from nephritis, aged 52.

Sampson A. Ayo, M.D. Tulane University, New Orleans, 1899; a member and one of the councilors of the Louisiana State Medical Society; and a member of the State Board of Health; died at his home in Thibodaux, March 11, from pleuropneumonia, aged 38.

Benjamin Thompson, M.D. Pennsylvania Medical College Gettysburg, 1851; formerly a member of the American Medical Association; local surgeon of the Baltimore and Ohio Railroad at Landenberg, Pa.; died at his home in that place, recently, aged 83.

William Jennings Headrick, M.D. University of Louisville, Ky., 1876; a member of the Louisiana State Medical Society; and local surgeon of the Houston, East and West Texas Railway; died at his home in Logansport, Nov. 2, 1910, from paralysis, aged 63.

Benjamin Dudley Williams, M.D. University of Louisville; Ky., 1884; a member of the American Medical Association; president of the Calhoun County Medical Association; died at his home in Oxford, Ala., March 12, from pneumonia, aged 57.

Lorenia Kemble (license, years of practice, Ind., 1897); for thirty-five years a practitioner of South Bend; died in St. Joseph's Hospital in that city, February 17, eleven days after an operation for carcinoma of the uterus, aged 62.

Charles W. Kinnison, M.D. Starling Medical College, Columbus, O., 1891; of Oak Hill, W. Va.; died suddenly, March 27, from heart disease, on a Chesapeake and Ohio train, while en route to Johns Hopkins Hospital, Baltimore, aged 44.

William Clark Cooper, M.D. Albany (N. Y.) Medical College, 1881; College of Physicians and Surgeons, New York City, 1884; obstetrician to Samaritan Hospital, Troy, N. Y.; died at his home in that city, March 17, aged 52.

George Canning Howard, M.D. Dartmouth Medical School, Hanover, N. H., 1865; formerly of Lawrence, Mass.; a member of the Massachusetts Medical Society; surgeon of volunteers during the Civil War; died at the home of his son in North Attleboro, Mass., March 19, from diabetes.

Nathaniel Leo Niles, M.D. Harvard Medical School, 1905; a member of the Providence, R. I., Medical Society; radiologist to St. Joseph's Hospital, Providence; died at his home in that city, March 23, from carcinoma of the stomach, aged 34.

Fred C. Miller, M.D. Minneapolis College of Physicians and Surgeons, 1899; a member of the Minnesota State Medical Association; health officer of Olivia; died at his home in that city, March 19, from pneumonia, aged 42.

Arnett Phillip Boston, M.D. Tulane University, New Orleans, 1877; a specialist on diseases of the eye, ear, nose and throat; of Alice, Tex.; died at his old home in Beech Grove, Ky., March 16, from cerebral hemorrhage.

Ledyard Verdine Lewis, M.D. Rush Medical College, 1870; of Sun Prairie, Wis.; a member of the American Medical Association; died at his winter home in Redlands, Cal., March 19, from cerebral hemorrhage, aged 65.

Robert W. Cooper, M.D. Michigan College of Medicine and Surgery, Detroit, 1892; formerly of Milford, Mich.; died at his home in Kingston, Mich., March 11, from brain abscess following influenza, aged 47.

Edward R. Aiken, M.D. Albany (N. Y.) Medical College, 1868; for more than thirty years a practitioner of Perry, Ia.; died at the home of his son in Aiken, Neb., March 18, from arteriosclerosis, aged 65.

Arthur Henry Bigg, M.D. Detroit (Mich.) Medical College, 1881; a member of the American Medical Association; and Detroit Academy of Medicine; died at his home in Detroit, March 17, aged 69.

Elbert Goodman Van Orsdell, M.D. Albany (N. Y.) Medical College, 1902; a member of the Medical Society of the State of New York; died at his home in Brooklyn, March 25, from pneumonia, aged 40.

Gilbert H. Tollington, M.D. College of Physicians and Surgeons, Chicago, 1885; a specialist on diseases of the eye; died at his home in Clear Water, Minn., February 12, from chronic nephritis, aged 48.

John Holin, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1879; a member of the American Medical Association; died at his home in Cowden, Ill., March 18, from pneumonia, aged 65.

Mozark Jenkins, M.D. University of Vermont, Burlington, 1884; a member of the Medical Society of New Jersey; died at his home in Trenton, March 19, from laryngitis, aged 55.

Christopher William Flock, M.D. Victoria College, Coburg, Ont., 1856; for twenty years a practitioner of Nebraska; died at the home of his son in Emerson, March 11, aged 82.

Philander Tabor (license, Iowa, years of practice, 1887); for fifty-four years a resident of Independence, Ia.; died at the home of his son in that place, March 21, aged 93.

Willard Warren Ruggles, M.D. New York Homeopathic Medical College, New York City, 1908; died at his home in Brewster, N. Y., March 7, from typhoid fever, aged 31.

George Walker Bull, M.D. Bellevue Hospital Medical College, 1873; an ophthalmologist; formerly a resident of New York City; died in Paris, France, January 1.

Joseph Hartman Armitage, M.D. McGill University, Montreal, 1886; died at his home in Waterloo, Ont., January 18, from fracture of the spine, aged 50.

Lewis K. Esrey, M.D. Hahnemann Medical College, Philadelphia, 1888; died in his office in Philadelphia, March 24, from heart disease, agen 68.

William John Hare, M.D. Bellevue Hospital Medical College, 1885; died suddenly at his home in Detroit, March 23, from heart disease, aged 52.

Alexander C. Taylor, M.D. University of Pennsylvania, Philadelphia, 1850; died at his home in Vineland, N. J., March 22, aged 86.

William T. Risque, M.D. Kentucky School of Medicine, Louisville, 1856; died at his home in Paynes Depot, Ky., March 24, aged 83.

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While it is probably true that the physician's insufficient knowledge of drugs and of their use has been the chief cause for the growth of the proprietary specialty business, the pharmacist's inability to compound physicians' prescriptions properly has also been a potent cause for the prescribing of ready-made mixtures. Rancid or poorly made cod-liver oil emulsions have persuaded many a physician to prescribe Scott's Emulsion or some similar nostrum. Gritty ointments and turbid eye-drops have induced specialists to use ready-made preparations or to do their own dispensing. A program of a meeting of pharmacists—the Philadelphia Branch of the American Pharmaceutical Association—however, gives hopes that pharmacists are making serious efforts to improve professionally.

While the programs of meetings of retail pharmacists are often devoted to price protection, window trimming and the proper handling of cigars (live commercial topics, it is true), the meeting of the Philadelphia branch was devoted to a discussion of sterilization and its need as applied to pharmaceutical compounding. It also appears that the branch has a special committee whose function it is to arouse the interest of pharmacists throughout the country to the necessity of devising reliable methods for the preservation of galenicals, and also to the need of establishing a time limit for such pharmaceutical products as are known to deteriorate with age. Both of these subjects—the need in many cases of sterilizing pharmaceutical preparations and the necessity of giving proper attention to keeping qualities—are most important ones and their consideration cannot but be a benefit to professional pharmacists.

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ronchiline, Genitone, Laxaphen, Mi-
osine, Ovaritone, Trigemin and Uri-septin. More recently, largely as a result of the influence of the Council on Pharmacy and Chemistry, manufacturers have adopted names which are more satisfactory, or, at least, that are a vast improvement over those used in the past. Thus, among the articles more recently passed by the Council are, Arsenoferratin, an organic compound of iron and arsenic; Carbosant, a carbonate of santalol; Digipuratum, a purified digitalis extract; Guaiacodein, a compound of codein and guaiacol; Tannismuth, a tannate of bismuth. These names are brief and to a certain extent descriptive of their composition. There is no basis for the excuse often given by exploiters of proprietary medicines for therapeutically suggestive names, namely, that it is impossible to coin names which are descriptive and yet sufficiently short and simple. Such disease-suggesting names as Antitussin, Pertussin, Migrainin, Somnos or Calmine should not be tolerated.

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"Tests which would detect minute quantities of acetanilid failed to reveal the slightest trace of this substance. The odor of the solution was distinctly characteristic of oxids of nitrogen such as are produced in the decomposition of nitrates or nitrites. The presence of a small quantity of nitrate—a regular constituent of this preparation—was detected and also the presence of considerable quantities of a nitrite. Quantitative determinations showed the presence of an amount of nitrite equivalent to 2.9 per cent. sodium nitrite. It seems improbable that a nitrate used in the preparation of this mixture had decomposed to form a nitrite; it is more likely that a nitrite was used inadvertently. If this preparation was given in doses of 8 c.c. (2 fluidrams)—the U. S. P. dose for liquor sodii phosphatus compositus—the patient received 0.2331 gm. or three and one-half times the U. S. P. dose of sodium nitrite."

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Correspondence

Postgraduate Surgical Clinics in America

To the Editor:—The increasing importance of surgery and the increase in the number of good surgeons in America is especially evident to one who has traveled extensively over this country and has had opportunity to observe closely and for long periods of time the work of America's surgeons. To a physician, nothing is more interesting than to visit the clinics of other physicians and this applies also to surgeons.

The custom is almost as old as medicine itself, and for many years numbers of American physicians have been going to Europe to visit the famous clinics for helpful suggestions and the pleasure of the trip. It is evident that the American surgical clinics are now finding a distinct place of their own. I recently returned from a two years' trip to some of the best-known clinics, where I gave time, energy and thought to the study of surgical diagnosis, technic, complications and after-treatment and others may be interested in a brief account of the opportunities for surgical study in America for graduate physicians, and description of places which seemed to be especially popular.

A constantly growing number of physicians and surgeons from all parts of the country are visiting the Mayo clinics at Rochester, Minn., the clinics of Johns Hopkins, the surgical clinic of the German Hospital in Philadelphia (Deaver) and the clinics of Murphy and Ochsner in Chicago. At these places I have seen from 25 to 100 men, many of whom have national reputations, enjoying the splendid clinics and the gracious hospitality extended by the surgeons to visitors. The chiefs of these clinics realize what a compliment it is for men to come from all over the continent to learn from them something definite and practical in the treatment of the sick. At some of these clinics there is a large comfortable room for the visitors, with a book of registry and books of reference: at the Rochester clinic there is a surgical club which meets in the afternoon and discusses the operations which have been performed in the morning. At all of these places one can find comfortable living accommodations.

At none of these clinics did I find the surgeons looking for money from their visitors and intimating that the visitors take a postgraduate course; no matter how long one stays, be it a day or a year, he is always welcome without price. If these leaders have been able to show a physician anything that will make him a more valuable man in his community, they are glad indeed. In this selfish and grasping age, such splendid courtesy and generosity are most commendable and stimulating, and there is no question that these clinics stand among the great achievements of our present civilization.

For those especially interested in gynecology, I found the clinics of Kelly at Baltimore, Bovee at Washington, Clark, Beyea and Baldy in Philadelphia, and Coe in New York, especially helpful. The surgical and gynecologic clinics of Boston are good and deserve a larger attendance. For practical work and the opportunity to do something in genito-urinary work I know of no place like Young's clinic at Baltimore.

The following up of the treatment of surgical cases is one of the things that a great many men want, and if a physician speaks to the operating surgeon and tells him that he wants to follow up the cases, the surgeon usually is only too glad to help and will introduce the visitor to the house officer. Arrangements can then be made to make the rounds with the house surgeon at an early hour in the morning.

Such has been my experience and taking this trip after five years of practical work, I found it most helpful and at the same time enjoyable. There are of course many other clinics where excellent work is done, but the clinics named are those that I, as well as many others, found especially stimulating.

F. W. Hornbrook, M.D., Boston, Mass.

Nasal Suction

To the Editor:—The value of negative pressure by suction in the treatment of diseases of the nasal sinuses has appealed to me for years and it has been my practice to insist that "secretions be aspirated and not blown" out of the nose following operations. When the vacuum pumps were first introduced I tried to use them, but without success until the past few weeks, as it was difficult to close the postnasal space. One day it occurred to me to have the patient take some water in the mouth and swallow it at command. This absolutely closed the space for a time and a little practice would keep it under control. This method so far has proved itself practical and is far ahead of all the other methods that I have seen or heard of. The effect is apt to be startling when it is first applied and it is well to advise caution regarding the water pressure as it is liable to produce dizziness. It is necessary, of course, for the patient to breathe through the mouth after the palate is raised in order to keep it in position. The technic otherwise is the same as is generally used.

Otis Orendorff, M.D., Canon City, Colo.

Cacodylate of Sodium in Coronary Disease

To the Editor:—Allow me to suggest the use of sodium cacodylate in coronary disease with resulting myocardial degeneration and its usual train of symptoms, such as: general edema, hypertrophied liver, pulmonary engorgement and a low hemoglobin content.

Its use in a case in which there was no history of any specific lesion was prompt and gratifying. An ampoule of the drug, containing 3 grains, was administered on alternate days, each dose being preceded by a small dose of cocain, to overcome the smarting which follows the injection of the drug under the skin. Salines sufficient to obtain a few watery stools were given each morning.

H. F. Gillette, M.D., Cuba, N. Y.

Correction in Analgesic Formula

To the Editor:—My attention has just been called to the analgesic formula in my contribution to The Journal, March 25, 1911, p. 863, which is so manifestly an error that I trust no one has adopted the quantities as given. The error must have occurred in dictation and subsequent transcription. The formula as published is dangerously meaningless. I intended it to read as follows:

℞ gm. or c.c.
Morphin hydrochlorid .... 0|01
Novocain .... 0|04
or
Scopolamin .... 0|0015
Normal salt solution............ 1|

Charles A. L. Reed, Cincinnati.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HUBBES' NASCENT MERCURY TREATMENT OF SYPHILIS

To the Editor:—In The Journal, March 25, 1911, p. 934, reference is made to an article by Hubbes. Who is Hubbes? Can you give anything further on his technic of treatment of syphilis with nascent mercury? F. G. Carlson, Thornton, Iowa.

Answer.—Dr. Fritz Hubbes was formerly assistant at the dermatologic clinic at the University of Graz, Austria. We can add nothing to the description of the technic given in our abstract.

THE AUTOMOBILE SPEED QUESTION

To the Editor:—I wish you would advise me if there is a law permitting physicians, on accident or emergency calls, to exceed the speed limits of cities, and, if so, is there any official emblem designating such favor to them? D. Y.

Answer.—Some information on this subject will be found on automobile pages XXI and XXII of this issue.

It is a common practice for physicians to place insignia on their automobiles, front and rear. They are thus recognized by policemen and often favored in the matter of right of way. These signs usually consist of a device in which the red Geneva Cross is prominent; but, in deference to the wishes of the American Red Cross, there is not a little sentiment in favor of leaving the red Geneva Cross for the use of that organization. Congress has passed an act to limit its use.

As a substitute it has been proposed to use the green St. Andrew's Cross. Something on this subject will be found in the department of Queries and Minor Notes, in The Journal of Aug. 27, 1910, page 795, and one firm, which supplies such insignia for automobiles, is prepared to supply the St. Andrew's Cross in answer to this suggestion.

DENATURED ALCOHOL

To the Editor:—1. What is denatured alcohol? 2. Would it be safe for external use, as bathing, etc.?

G. D. Carnes, South Haven, Mich.

Answer.—1. Denatured alcohol is alcohol to which have been added certain materials which destroy its character as a beverage and render it unfit for medicinal purposes but which do not prevent its employment for industrial purposes. Denatured alcohol is exempt from the internal revenue tax laid on ordinary alcohol and is sometimes called tax-free alcohol. Under authority of an act of Congress, passed in 1907, the commissioner of internal revenue has prescribed that for general purposes alcohol known as completely denatured must be prepared by either of the following formulas: (A) To every 100 gallons ethyl-alcohol (of not less than 180 degrees proof) there shall be added ten gallons of approved methyl-alcohol and one-half gallon of approved benzin. (B) To every 100 gallons of ethyl-alcohol (of not less than 180 degrees proof) there shall be added two gallons of approved methyl-alcohol and one-half gallon of approved pyridin bases. The methyl-alcohol, benzin and pyridin intended for use as denaturants must be submitted for chemical test and must conform to certain specifications. In cases in which the above-named substances would render the alcohol unfit for certain industrial uses special denaturants have been authorized.

2. The safety of denatured alcohol for external use depends on the denaturing agent. If methyl-alcohol (wood spirits) is used for the denaturing, it may be absorbed to such an extent as to produce poisoning, such as blindness, etc.

Philander Tabor (license, Iowa, years of practice, 1887); for fifty-four years a resident of Independence, Ia.; died at the home of his son in that place, March 21, aged 93.

Willard Warren Ruggles, M.D. New York Homeopathic Medical College, New York City, 1908; died at his home in Brewster, N. Y., March 7, from typhoid fever, aged 31.

George Walker Bull, M.D. Bellevue Hospital Medical College, 1873; an ophthalmologist; formerly a resident of New York City; died in Paris, France, January 1.

Joseph Hartman Armitage, M.D. McGill University, Montreal, 1886; died at his home in Waterloo, Ont., January 18, from fracture of the spine, aged 50.

Lewis K. Esrey, M.D. Hahnemann Medical College, Philadelphia, 1888; died in his office in Philadelphia, March 24, from heart disease, agen 68.

William John Hare, M.D. Bellevue Hospital Medical College, 1885; died suddenly at his home in Detroit, March 23, from heart disease, aged 52.

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A physician who desires to take a practical course and to have the privilege of the library of the Faculté de médecine pays a matriculation fee of about $6 (30 francs), and in addition a fee for each practical course taken up, which is on the average about $10 (50 francs).

In various hospitals, clinics and laboratories there are *cours de perfectionnement* organized at various times of the year, especially during vacation. These are announced by placards posted in the buildings of the Faculté de médecine and the various hospitals and by notices in the medical journals. The newcomer is advised to consult the last few numbers of some such periodical as the *Bulletin médical* or the *Presse médicale* for notices of non-official courses (that is, those not given under the auspices of the Faculté de médecine).

The fees are variable, but rarely exceed $10 or $20. Moreover, there are several associations for complementary medical instruction which organize similar courses. Such courses are organized twice a year at No. 18 rue du Luxembourg, the winter series in November and December, the summer series in May and June. Vacation courses comprising the principal specialties are also organized in September and October. The price is about $4 (20 francs) a course.

The course in bacteriology at the Pasteur Institute is three or four months long, and therefore is not given more than twice a year. Names must be sent in to Dr. Roux or his assistants some time in advance.

A free information bureau for physicians and others, officially known as the Bureau de Renseignements Scientifiques, is maintained at the Sorbonne. It is open all the year around from 10 to 12 and from 2 to 5, with attendants able to speak German, English, Russian and Spanish, and catalogued information of all subjects of interest to persons intending to pursue scientific study.

"An English Handbook to the Paris Medical School," by A. A. Warden, published by P. Blakiston's Sons & Co., 1012 Walnut Street, Philadelphia, price 50 cents, contains a map of the Quartier Latin and much useful information in regard to the schools and courses.

The cost of living in Paris naturally varies according to the location and accommodations required. The physician who comes to Paris to study will find it to his advantage to live in the Latin Quarter, which is the seat of the Faculté de médecine and of the Collège de France and is in proximity to many important hospitals and clinics. Room and board in private families may be had for a price varying from $30 to $50 a month (150 to 250 francs). Room without board costs on the average from $10 to $12 a month.

BERLIN

Many American physicians go to Germany or Austria for postgraduate study. Especial advantages are found there for laboratory work and research, and instruction is said to be better organized, especially in Vienna The two most important centers of medical instruction in German-speaking countries, of course, are Berlin and Vienna.

Medical courses at Berlin are divided into: (1) the regular university courses, which are intended for the undergraduate students; (2) vacation courses given by the university instructors during March and October, and (3) monthly courses by private instructors, which are given the year around. These are mostly policlinic or dispensary courses and correspond closely to the instruction given in graduate schools in the United States.

Regular student courses at the University of Berlin are often designed more for undergraduate than for postgraduate work. An occasional visit to these courses is welcomed without formality. To attend regularly one must sometimes matriculate. The university work is divided into a winter and a summer semester, the winter semester lasting from October 15 to March 15 and the summer semester from April 15 to August 15. The time for matriculation is comprised in the two weeks preceding the opening of the semester and the first two weeks of the semester. The matriculation fee is 18 marks; diploma and passport must be shown. Vacation courses are given twice a year (March and October) during the university holidays. These courses are for graduates in medicine and can be very highly recommended. They are, however, sometimes overcrowded. Most of these courses begin on the first day or during the first week of the month and last for four weeks. Assistantships or so-called "voluntary" assistantships are often obtainable in out-patient departments and inside the hospitals. The requirements of such positions may best be obtained from the older men in the Anglo-American Medical Association or members of its orientation committee.

As mentioned in the Berlin Letter (THE JOURNAL, March 4, 1911, p. 682), a double fee for the summer semester of 1911 has been imposed on foreigners attending lectures or taking laboratory work. The increase amounts to 10 marks ($2.50) for students in medicine and the natural sciences.

The Anglo-American Medical Association of Berlin was formed to promote the interests of British and American physicians studying in that city. The headquarters of the association are at Friedrichstrasse 105b, where an information clerk is in attendance from 9 to 10 a. m. The president is Dr. Bruggemann, Berlin W., Barbarossa Str. 33. The membership fee is 10 marks (about $2.50) a year. The year-book of the association will be sent by the secretary, W. J. Griffin, on receipt of 5 cents in foreign exchange stamp coupons. It contains courses most frequently attended by Americans, but does not pretend to be a complete list of all courses given in Berlin.

For courses not announced therein the newcomer should not fail to consult the following publications: (1) Verzeichnis der Vorlesungen (list of university courses), price 60 pfgs; (2) Ferien-Kurse für praktische Aerzte (vacation list); (3) Schacht, Ratgeber und Wegweiser für Teilnehmer an ärztlichen Fortbildungskursen, price 1 mark; (4) Verzeichnis der Monatskurse, gratis; (5) Kurse für praktische Aerzte, gratis; (6) Verein für Aerzte-Kurse, gratis. Nos. 1 and 2 are the most important and will be sent to the United States on receipt of 25 cents in foreign exchange stamp coupons. They would probably be supplied either by the Anglo-American Medical Association or by the information bureau, similar to that mentioned at the Sorbonne, which is maintained at the Kaiserin Friedrich-Haus, Luisenplatz 2-4.

Postgraduate courses on a large variety of subjects are given under the auspices of the Bureau des Zentralkomitees für das ärztliche Fortbildungswesen in Preussen, Berlin N.-W. 6, Luisenplatz 2-4, Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen. The subjects offered include the following: pathologic anatomy, internal medicine, surgery, ophthalmology, the clinical and practical application of bacteriology, diseases of women, obstetrics, industrial hygiene, diseases of the nose and throat, urinary diseases and gonorrhea, dermatology and syphilis, diseases of children, including the nutrition of normal and diseased infants, clinical chemistry, care of the sick, gastric and intestinal diseases, diseases of the ear, surgical and mechanical orthopedics, the latest applications of water, light, heat and electricity to therapeutics, roentgenology, etc.

The recently opened Amerika-Institut, under the directorship of Prof. Hugo Münsterberg, in the Royal Library Building, Universitätstrasse 6, Berlin VII, seeks to assist Americans who wish to come into contact with German institutions, scholars, libraries, archives, laboratories, museums, hospitals, academies, etc.

It is imperative that American citizens bring with them passports. They must register in the consulate when arriving in Berlin. If possible it is best to reach Berlin about the twentieth of the month. According to information furnished by the Anglo-American Medical Association, at least one week should be spent in personal examination of the opportunities for study and in getting settled before beginning work.

DÜSSELDORF

The Academy for Practical Medicine, Düsseldorf, offers courses, open to foreign physicians, in pathologic anatomy and experimental therapy, and clinical courses in surgery, gynecology, obstetrics and pediatrics. The only expense is a registration fee of about $1.25.

VIENNA

Vienna presents many advantages from the medical student's point of view, one of which is the great amount and variety of the clinical material, since patients come to Vienna from territory within a very large radius. Another advantage is the centralization of facilities for instruction, which makes it possible for the student to economize his time.

There are ten large public hospitals, the chief of which, the Allgemeines Krankenhaus, comprises three clinics each of surgery and medicine, two clinics each for gynecology, dermatology and syphilis, ophthalmology, mental and nervous diseases, and one each for otology, rhino-laryngology and pediatrics. Some clinical teachers not only speak English fluently but give lectures in English in special classes. Within the last few years a magnificent new hospital has been erected a few hundred feet away from the old Allgemeines Krankenhaus, which is to be pulled down. It will contain only clinical wards for clinical teaching by ordinary professors. It is lavishly equipped in the most modern and scientific manner and will, when finished, contain 2,600 beds.

Besides this general hospital there are the Wiedner Hospital, the Rudolph Hospital and the Poliklinik, connected with the medical department of the university, in which clinical lectures are given also by professors during the semesters. The winter semester lasts from October till March 31, the summer semester from May 15 to July 15. The fees for clinical semester lectures are low, about $6 being the maximum, while special lectures are more expensive. A very good opportunity for anatomic and dissecting work is offered in the Anatomisches Institut, for pathologic anatomy and bacteriology in the Pathologisch-Anatomisches Institut. In these official institutes the fees for working and material come to something like $10 to $15 per term of eight weeks. There is also a well-equipped institute for the study of physiology, and one for histology of the nerves. A modern institute for experimental pathology and therapeutic research was opened two years ago. All the institutions mentioned above are in the same quarter or district of Vienna, called Alsergrund, and are conveniently near each other.

Those who wish to spend considerable time in the wards do not find it difficult to obtain the position of *Hospitant* in the wards, where they have the same rights as ordinary hospital officers, but not their duties; they, of course, receive no pay. The clinics for dermatology, practical medicine, syphilis, ophthalmology and otology especially are much frequented by American *Hospitants.*

The following are specimen charges in classes arranged by privat-docents and professors: Diagnostic classes for internal diseases, $10 for six weeks; hematology, $25, four to six weeks; surgery of the genito-urinary system, $20, four weeks; surgery of the ear, $15 to $20, six to eight weeks. In classes on rhinology the fees are between $20 and $40, including operations on patients. Surgical practice on the cadaver is obtainable as a special course. Urbantschitsch's classes on otology are much frequented by English-speaking physicians, and Finger's English classes on dermatology are an old-established institution. Furthermore, it is possible to get up a special class for nearly any branch of medicine if the lecturer is guaranteed a minimum fee varying between $100 and $150 for the whole class, so that there is a vast opportunity for both practical and theoretical teaching at a low cost to the individual members of the class.

The following is reported by an observer as a specimen day: From 8 to 10 a. m., class at von Noorden's clinic, a case of syringomyelia, two cases of multiple sclerosis; 10 a. m. to 12 m., Hochenegg's clinic, removal of a cancer of the breast, operation on a pancreatic cyst; 12 m. to 1 p. m., at Weichselbaum's pathologic theater, twenty-five fresh specimens, obtained during the morning at the necropsies, cancer of the penis, diphtheritic inflammation of the larynx, a volvulus, an anencephalus, a liver with fatty degeneration from phosphorus poisoning, typhoid intestines, leukemic bone-marrow, and several other interesting specimens; 1 to 2 p. m., a Cesarean section in Schauta's clinic; 4 to 5 p. m., a retinoscopy class in the second ophthalmic clinic, where cases of optic neuritis, iritis and keratitis specifica, glaucoma and a case of papilledema were shown; 5 to 6 p. m., work at a chemical laboratory; 6 to 7 p. m., an operative class on the ear of the cadaver.

There are two well-equipped public libraries. One is the large reading-room (Lesezimmer) of the Universitäts-Bibliothek, comprising about 400,000 books, and the other is the Aerztliches Lesezimmer in the hospital, with about 22,000 books and periodicals. English medical works are provided in abundance and access to these libraries is easily obtained.

The American Medical Association of Vienna, Schlösselgasse 28, Vienna VIII, secretary, Dr. M. W. Jacobs, also will be glad to assist any newcomer and to give information on study or other subjects.

A handbook in German, English and French of the postgraduate medical work under the patronage of the free organization for medical courses at the University of Vienna (Aerztliche Fortbildungskurse der freien Organisation für die medizinischen Kurse an der k.k. Universität Wien) is published by Urban & Schwarzenberg 1, Maximilianstrasse 4, Vienna, and supplied gratis on application.

A bureau of information for medical courses is maintained in the Allgemeines Krankenhaus, First Court, head offices (Direktion), first floor, room 14, where information can be obtained on personal or written application.

In the Alsergrund, the district which corresponds to the Latin Quarter in Paris, a conveniently situated room may be had for $8 or $12 a month. Board may be obtained for about $30 or $40 a month, or even less; $10 or $12 a week may be made to cover the expenses of decent living. There are low-priced private dining-halls for medical students and more expensive boarding-houses on the English plan. The following streets are suitable and convenient: Spitalgasse, Alserstrasse, Lazarethgasse, Pelikangasse, Kochgasse, Skodagasse, Schlösselgasse, Währingerstrasse and Garnisonsgasse.

TRAVEL NOTES OF INTEREST TO PROSPECTIVE STUDENTS ABROAD

The following letters and articles, published in The Journal and elsewhere, may be found of interest by the physician who is planning a trip abroad:

Hall, J. N.: Postgraduate Work in Vienna, The Journal, Dec. 7, 1907, p. 1932.
Osler, William: Vienna After Thirty-Four Years, The Journal, May 9, 1908, p. 1523; Impressions of Paris, *ibid,* Feb. 27, 1909, p. 701; March 6, 1909, p. 771.
Davis, A. Edward: Postgraduate Medical Instruction in Vienna, *Jour. Ophth. and Oto-Laryngol.,* April, 1909, p. 127.
Mannheimer, G.: Postgraduate Study in Europe, *Med. Rec.,* May 8, 1909.
Dewey, Richard: Psychiatry in Munich, The Journal, Jan. 1, 1910, p. 65.
Macy, Mary S.: Postgraduate Medical Work for Women in Europe, *Woman's Med. Jour.,* March, 1910, p. 59.
Kast, L.: The International Committee for Postgraduate Medical Education, *Post-Graduate,* June, 1910, p. 632.
Slocum, George: The American Medical Student in Vienna, *Phys. and Surg.,* July, 1910, p. 262.
Richardson, F. H.: Postgraduate Study of Pediatrics in Vienna, The Journal, Oct. 8, 1910, p. 1303.

While the Continental Anglo-American Medical Society is not organized for purposes of instruction, the American physician traveling on the Continent may find it useful to have the list of its members, as it will give him the names of English-speaking confrères in continental Europe, and northern Africa as well. The honorary secretary and treasurer is Dr. Charles G. Jarvis, 81 Boulevard Malesherbes, Paris.

CONVERSATIONAL AIDS IN FOREIGN LANGUAGES

To the Editor:—Please give me information in regard to books that will aid practitioners in obtaining a working knowledge of German and French. L. R. C.

Answer.—One of the most rapid means of acquiring a foreign language is by reading articles in that language, comparing them meanwhile, sentence by sentence, with a literal translation. "Medical German," by Deutsch, price $1.75, contains conversations with patients in German and English. A volume of German-English medical dialogues, with dictionary and grammar, by Robert Lewin, is published by Dr. Werner Klinkhardt, Leipsic.

Other aids to conversations in French and German are P. Blaschke's English-German "Medizinisches Konversationsbuch," published by the Verlag von Walther Rothschild, Berlin. This is sold in this country for $1.20. Another work of this kind, "Englisch für Mediziner," about the same price, is published by the Verlag von J. A. Barth, Leipsic. But the most valuable work of the kind, perhaps, is the "Medical Vademecum in English and German" by B. Lewis, 1910, which is sold by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, for $5. This was reviewed recently in The Journal (July 30, 1910, page 425) and commended as an ideal means of obtaining a working knowledge of German without the necessity for a dictionary; the postgraduate lectures and talks are given in English and in German on opposite pages. Especial attention is given to the conversations needed in conducting the examination of a patient in various pathologic conditions. The sixty lectures are on various subjects and are authentic clinical lectures. "Self-Taught French" by F. Thimm, and similar pamphlets for German, Spanish and Italian, are published by Dick & Fitzgerald, 18 Ann Street, New York, and are useful for general conversation. A reply to a query in regard to dictionaries in foreign languages was published in The Journal, March 20, 1909, page 980.

The Public Service

Medical Department, U. S. Army

Changes for the week ended April 1, 1911.

Harmon, Daniel W., lieut., granted two months' leave of absence, to take effect on arrival in the United States.

Skelton, Robert, M.R.C., ordered to proceed to Fort Jay, N. Y.

Davidson, Wilson T., captain, relieved from further duty at Columbus Barracks, Ohio, and ordered to Fort McIntosh, Texas.

Davis, William R., captain, ordered to proceed from Fort Porter, N. Y., to Cleveland, Ohio, on official business pertaining to the medical department of the Army.

Heterick, Robert H., M.R.C., relieved from duty at the Army Medical School and ordered to Fort Brady, Mich., for duty.

Bundesen, H. N., M.R.C., resignation accepted by the President, to take effect March 30, 1911.

Williamson, L. P., lieut., ordered with Co. I, Signal Corps, from Nogales, Ariz., to Hachita, N. Mex., for station.

Wing, Franklin F., D.S., ordered to proceed from Fort D. A. Russell, Wyo., to Fort Robinson, Neb., for temporary duty.

Tuttle, George B., M.R.C., ordered to Fort Miley, Cal., for temporary duty.

Whitmore, E. R., major, on expiration of his present leave of absence ordered to Fort Barrancas, Fla., for duty.

Newton, R. W., M.R.C., ordered to proceed to San Antonio, Texas, and report to the commanding general, department of Texas, for temporary duty.

Blanchard, R. M., captain, left Fort Sheridan, Ill., to inspect the medical and hospital corps of the organized militia of the states of Ohio, Indiana, Illinois, Michigan and Wisconsin

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended March 29, 1911.

Stimpson, W. G., surgeon, granted seven days' leave of absence from March 25, 1911, under paragraph 189, Service Regulations.

McLaughlin, A. J., P. A. surgeon, directed to proceed to various places on the south shore of Lake Erie on special temporary duty.

Warren, B. S., P. A. surgeon, granted fifteen days' leave of absence from March 24, 1911, on account of sickness.

Stimson, A. M., P. A. surgeon, directed to proceed to Philadelphia on special temporary duty.

Pettyjohn, Joseph, P. A. surgeon, granted two months' leave of absence from March 23, 1911, on account of sickness.

Kearny, R. A., asst.-surgeon, directed to proceed to Astoria, Ore., and report to commanding officer of the Revenue Cutter *Manning* for duty.

Parcher, George, asst.-surgeon, directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Stiles, C. W., professor of zoology, directed to proceed to Wilmington, N. C., on special temporary duty.

Drs. George Parcher and Louis Schwartz, commissioned (recess) assistant surgeons in the Public Health and Marine-Hospital Service.

Boards of medical officers convened to meet on April 3, 1911, for the physical examination of candidates for appointment as cadet-engineer in the Revenue-Cutter Service. Stapleton, N. Y., detail amended *as follows: Passed Assistant Surgeon* W. A. Korn, chairman; Passed Assistant Surgeon E. A. Sweet, recorder.

Order convening board at Milwaukee, Wis., revoked.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

FINANCIAL PROBLEMS *

Charles Haase, M.D.,

ELMIRA, N. Y.

COLLECTING ACCOUNTS

Laying aside all sentiment concerning the practice of medicine that has been handed down from the past when physicians made no charge but accepted honorariums, the fact remains that the physician, like the business man, must keep his income equal to or above his expenditures in order to maintain his credit. The business man from whom he buys expects to be paid; so why should not physicians also expect to be paid for their services? If a physician collects a good share of his accounts each year, it not only enables him to keep his family comfortable, but it also enables him to buy journals, books, instruments and other accessories, that make it possible to render better services to his patients.

Physicians should endeavor to collect from all who are able to pay, even invoking the aid of the law when necessary; but always remembering to take care of those who are unable to pay. It is better to do less business at a proper remuneration than twice the work at half pay. The income will be the same and there will be more time for study and recreation.

The physician's worst enemies are those who have old, unsettled accounts; and these enemies can be changed into friends if they can be made to settle their indebtedness. A person who owes the physician money and does not intend to pay will be one of the first to knock him.

"Short accounts make long friends." By accustoming all classes of patients to an early rendering of accounts, while the amount is small and the service is fresh in memory and appreciation, the satisfaction of both patient and physician will be better assured, collection facilitated, and a better financial morale promoted. The regular collection of accounts has several good effects on a doctor's patients; it teaches them that he expects to be paid for his services, it prevents the bill becoming so large that they are unable to pay it, it weeds out bad payers early, and it avoids many losses due to removals and deaths. To avoid payment people go elsewhere. A good rule to follow is never to allow an account to get larger than a family can comfortably afford to pay. It is unquestionably easier for patients to pay and for a physician to collect $10 twelve times a year than $125 once a year—or even $30 four times a year.

Soon after services are rendered a statement should be rendered, and on the first or fifteenth of each month thereafter. In long-continued cases, the physician should try to collect something while attending the patient. Some men never present a bill but wait the patient's pleasure to pay. This is demoralizing, as it puts the physician in a wrong light. The patient gets the idea that the physician does not need the money and can wait, and he is then often forgotten. Others present bills only once a year, which plan is also open to objection, for the patient accidentally or intentionally forgets the circumstances surrounding a case or the items of the account, and disputes the bill. After sending two or three statements and receiving no response, nothing gives such good results as personal visits.

The accounts may be given to an attorney or a local collector. It is important that a physician keep his word with his debtor. If the physician states that he will sue after a certain date, if the individual fails to make a satisfactory arrangement about his account, then he must do it. The moral effect of a successful collection is of more value than the costs. Having people say: "Dr. Blank is a good doctor, but he expects his pay," is worth hundreds of dollars and the reputation can be acquired by a couple of years of close collecting.

FEES

The income from a medical practice rarely equals the income obtained by men of equal ability, whose education and capital are invested in commercial pursuits, notwithstanding the great responsibilities physicians carry which laymen escape. The principal reason for this is that physicians have a constant tendency to settle down to a level—and that the lowest level of professional fees—from which they find it difficult to rise. There is too much tendency to dull routine in charges. There should exist a wide range of charges for medical services, depending on several factors, such as the severity of the case, time given to it, the dangers to the physician and his practice, and the ability of the patient to pay. People should be impressed with the fact that the fee bill represents the minimum fee for ordinary services only, and that when special attention is required a fee in accordance with it should be expected. This is done in surgical cases; why not in medical cases?

The price of a visit does not necessarily pay for services rendered. When, therefore, physicians try to collect something for extra services they are invariably confronted with the settled price of a visit. Such a procedure by no means compensates the physician under all circumstances. A rich man will have his life saved for a thousandth part of what he will pay a lawyer to save his business, and then he will object to the physician's bill. The lawyer long ago learned to value and to charge for special services according to their value and according to the ability of the client to pay; he no longer charges so much a visit or consultation.

When a physician has saved a patient from death or from poisoning he should charge for a major operation, which is what has really been performed, and he should not send a bill for $2 for a night call. It is the medical profession's duty to educate the unthinking public to appreciation of the fact that it takes more skill and a finer quality of judgment to carry a patient through a long period of critical expectancy terminating in a successful accouchement, than to amputate an arm or a leg, and that physicians should be paid accordingly.

In attending contagious diseases, physicians incur danger to themselves, their family and their practice. They should be compensated for the risk and the loss sustained, by a reward at least double that received in ordinary cases.

There is no need of rendering an itemized account to patients. In making out a bill, medical men should take into consideration time, ability and service; nothing less than this will insure the justice that they deserve. Unless physicians come to some understanding of this kind with themselves, unless they ask for a professional fee in proportion to their service and without fixed rates, they will never be paid for what they do. For example, during certain stages of a case of pneumonia or diphtheria, it is important that they be able to watch the case very closely and adapt treatment to the varying conditions, instead of making a regular visit and going back to the office to await further summons. If a lump charge be made, they will feel at liberty to call as often as necessary.

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* Read at the Elmira Clinical Society, November, 1910.

The dead-level fee—the same price for everybody—for all kinds of cases—should have no place in medicine.

DISPENSING

It certainly pays to dispense: First, the patient has his treatment at once; second, he will return if he needs more medicine and the physician can see the effect of the medication and change, continue, or discontinue it as necessary; third, the patient cannot pass the prescription to his friends who are "just as he was." A physician who habitually writes prescriptions, or prescribes proprietary preparations, simply hands over to the public a part of his income. Hit or miss, the laity will essay to treat themselves and even their friends and neighbors by the name or number on the bottle or box. At times, when the physician has not the appropriate medicine, it will be necessary to write a prescription, but this will not happen often, if he learns thoroughly the action of the most important drugs and carries them in his case. Let physicians have printed on their prescription blanks, "Do not repeat" or "*Ne repetatur.*"

The New York Board of Health undertook to ascertain the extent to which substitution was being practiced in New York City, and sent out 373 prescriptions for phenacetin, with the result that only 58 were found to be pure phenacetin; in 315 there was substitution.

SUMMARY

To sum up: Let physicians collect while bills are small; educate the people that the fee schedule is only a minimum one; present bills in lump sums, and keep guard over prescriptions.

110 West Church Street.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Ninth Month—Second Weekly Meeting

ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM

WEIGHT and size of the brain and spinal cord in infancy and childhood. Rate of growth.

PHYSIOLOGY OF NERVOUS SYSTEM: Instability of nerve centers; excessive irritability of motor, sensory and vasomotor nerves; marked effect of reflex irritations; grave permanent effects following slight lesions.

DISEASES OF THE NERVOUS SYSTEM

CONVULSIONS: Etiology: Predisposing causes, instability of nerve centers, nutritive disturbances, constitutional diseases, heredity, etc. Exciting causes: (1) Direct irritation of cortex, meningitis, hemorrhage, abscess, etc.; (2) reflex irritation, digestive disturbances, injuries, phimosis, retention of urine, etc.; (3) toxic influences, uremia, asphyxia, acute infections, pertussis, convulsions associated with enlarged thymus. Idiopathic convulsions.

Diagnosis as to etiology.

Treatment in detail.

TETANY

ETIOLOGY: Age, sex, frequency. Rickets, gastro-intestinal disorders, bronchopneumonia, etc.

SYMPTOMS: Onset of spasm, extension, duration. Reflexes, effect of local irritation. Pain.

Diagnosis.

LARYNGISMUS STRIDULUS

Frequency, age, association with rickets. Symptoms and diagnosis.

REFERENCE BOOKS FOR THE NINTH MONTH

Holt: Diseases of Infancy and Childhood.
Koplik: Diseases of Infancy and Childhood.
Rotch: Pediatrics.
Starr: American Text-Book of Diseases of Children.
Taylor and Wells: Diseases of Children.
Pfaundler and Schlossman: Diseases of Children.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. George C. Ober, 125 B St., S.-E.

GEORGIA ECLECTIC: State Capitol, Atlanta, about April 20. Sec., Dr. C. W. Miller, 192 W. North Ave.

NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. J. A. Massie.

OKLAHOMA: Oklahoma City, April 11. Sec., Dr. Frank P. Davis, Enid.

WEST VIRGINIA: Huntington, April 10-12. Sec., Dr. H. A. Barbee, Point Pleasant.

Colorado January Report

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, Jan. 3-7, 1911. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Nine candidates were examined, of whom 3 passed and 6 failed, including 1 osteopath. Twenty-nine candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Denver and Gross College of Medicine,	(1910)	80.1, 80.1, 82.8

FAILED

College	Year Grad.	Per Cent.
Keokuk Medical College	(1898)	58
Kentucky School of Medicine	(1898)	63.6
Barnes Medical College	(1907)	66.1
St. Louis College of Physicians and Surgeons	[illegible]	[illegible]
Kansas City Hahnemann Medical College	(1910)	66

REGISTERED ON CREDENTIALS

College	Year Grad.	State Licenses
Georgetown University	(1899)	Kansas
Hahnemann Med. Coll. and Hosp., Chicago (1900)	(1907)	Illinois
College of Physicians and Surgeons, Chicago	(1889)	Virginia; (1905) (2, 1906) Illinois.
Northwestern University Medical School	(1897)	Illinois
Keokuk Medical College	[illegible]	[illegible]
College of Physicians and Surgeons, Keokuk	(1881)	Missouri
Drake University	(1897)	Wyoming
Sioux City College of Medicine	(1901)	Iowa
Kansas Medical College	(1898)	Kansas
[illegible]	(1889)	Missouri
[illegible] siana	(1906)	Alabama
[illegible]	(1903)	Penna.
[illegible] Medicine	(1898)	Oklahoma
[illegible]	(1895)	Kansas
[illegible] ians and Surgeons	(1893)	Kansas
[illegible] St. Louis	(1908)	Missouri
University and Bellevue Hosp. Med. College	(1903)	Utah
Lincoln Medical College	(1901)	Nebraska
Long Island College Hospital	(1895)	New York
New York Homeopathic Med. Coll. and Hospital	(1903)	New York
Cleveland Homeopathic Medical College	(1909)	Ohio
Jefferson Medical College	(1887)	Penna.
University of Pittsburg	(1907)	Penna.
Medical College of South Carolina	(1902)	S. Carolina
University of Nashville	(1899)	Nebraska

The following questions were asked:

ANATOMY

1. Describe the radius, including muscular and ligamentous attachments. 2. Describe the sternum, including muscular and ligamentous attachments. 3. Describe the elbow joint. 4. Describe the ankle joint. 5. Give the origin, insertion and nerve supply of the following muscles: triceps, pyriformis, peroneus longus, levator ani, levator anguli scapulæ. 6. Name the supinators of the forearm and give the nerve-supply of each. 7. Name the branches of the internal iliac artery. 8. Give the collateral circulation that would follow ligation of the common carotid. 9. Describe the lumbar plexus. 10. Describe the right kidney, including its relations. Alternate question: Where are the cortical centers of the face, arm and forearm?

PATHOLOGY

1. Give the pathology of acute anterior poliomyelitis. 2. Describe the process of amyloid degeneration. 3. Describe the structure of sarcoma, giving the various types. 4. How would you make a Widal test? 5. How would you distinguish *B. coli communis* from *B. typhosus?* 6. Define (1) anaphylaxis, (2) tuberculin, (3) *Treponema pallida*, (4) Wassermann reaction, (5) leukopenia. 7. Discuss

uremia. 8. Describe the most common tumor found in bone. 9. Describe the changes undergone in the brain after cerebral embolism. 10. Give microscopic appearances of a gumma.

PHYSIOLOGY

1. Discuss metabolism. 2. Discuss digestion. 3. Discuss elimination. 4. Discuss respiration. 5. Discuss circulation (blood and lymph). 6. Give a physical description of the blood, with functions of its component parts. 7. Define reflex arc, give examples of reflex action. 8. Give in outline the sympathetic nervous system with functions. 9. Give distribution and function of cranial nerves. 10. Define hyperopia, myopia and astigmia, giving general principles involved in their detection and correction.

CHEMISTRY

1. What is indican, and what does it signify when found in the urine? 2. How would you determine the presence or absence of acetone in urine? 3. Define osmosis. 4. What are the chemical constituents of normal urine? 5. Give a concise description of a chemical examination of normal urine. 6. Name a chemical incompatibility, describing the reaction. 7. What chemical tests are used in the detection of occult blood? 8. Give a general definition of an ether. 9. Give the composition of water by volume and by weight. 10. What is a compound radical? Give examples, with the valence of each.

TOXICOLOGY

1. From a medical standpoint define toxicology. 2. In the event you were called to a case with the following symptoms—drowsiness, headache, giddiness, stupor, delirium, convulsions and paralysis, what would be your diagnosis? 3. What would be your treatment? 4. Give symptoms of poisoning by lead acetate. 5. Treatment and post-mortem appearance. 6. Give symptoms of poisoning by tartar emetic. 7. Treatment and post-mortem appearance. 8. Give symptoms of poisoning by corrosive sublimate. 9. Treatment and post-mortem appearance. 10. Give difference in symptoms of poisoning by corrosive sublimate and those of arsenic.

SURGERY

1. Give the causes of arteritis and describe the symptoms and complications. 2. What are the symptoms and causes of lymphadenitis. 3. Give the symptoms of a tubercular abscess. 4. Discuss sarcoma of the kidney. 5. Give the symptoms and causes of acute osteomyelitis. 6. Give some of the complications and consequences of fractures. 7. Give the symptoms of fracture of the surgical neck of the humerus. 8. Give the symptoms of tubercular arthritis of the elbow joint. 9. Give the symptoms of dislocation of the head of the femur on the dorsum of the ilium and what per cent. of hip dislocations does this form comprise? 10. Give the symptoms of strangulated hernia.

OBSTETRICS

1. Describe in detail your procedure after arrival at the lying-in chamber when the patient is (a) in the first stage of labor, (b) in the second stage, (c) and the third stage. 2. Describe the toxemias of pregnancy and tell what you would do to prevent or relieve same. 3. What is "morning sickness?" Give causes, duration and treatment. 4. What are the indications for the use of the obstetrical forceps? Describe their application. 5. Give directions for the care of a woman after delivery—(a) normal, (b) instrumental. 6. When should a lacerated perineum be repaired, and give technic? 7. What means would you employ to prevent laceration of the perineum when the head is well down on the perineum and labor pains are strong? 8. How would you treat a case of ophthalmia neonatorum? 9. Give symptoms of pregnancy and their relative importance. 10. Give method of procedure in case of retained secundines in four month abortion.

SYMPTOMATOLOGY

1. Describe, locate and give causes of the different heart murmurs. 2. In what order and at what time do the teeth erupt in childhood? 3. Give symptoms of tuberculous hip-joint disease. 4. Give cause and symptoms of multiple neuritis. 5. Give symptoms of scurvy in children. 6. Give cause, prognosis and symptoms [illegible] Give symptoms of chronic appendicitis. 8. De- [illegible] in making a physical examination of the abdo- [illegible] between pyelitis and cystitis. 10. Give cause and symptoms of pulmonary edema.

Utah January Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 4-5, 1911. The number of subjects examined in was 21; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 8, of whom 7 passed and 1 failed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern Univ. Medical School (1909) 80.8;	(1910)	76.5
Hahnemann Med. Coll. and Hosp., Chicago	(1910)	75
St. Louis College of Physicians and Surgeons	(1910)	77.1
Medical College of Ohio	(1902)	77.5
Jefferson Medical College	(1910)	84.4
Medico-Chirurgical College, Philadelphia	(1899)	79.3

FAILED

College	Year Grad.	Per Cent.
Gross Medical College	(1895)	45

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1909)	Illinois

Book Notices

Dyke's Automobile Encyclopedia (1911). In 29 Parts, Including a Dictionary. Treating on Construction, Operation, Repairing of Automobiles and Gasoline Engines. By A. L. Dyke, E.E., Member Society Auto Engineers. Cloth. Pp. 407, with illustrations. St. Louis: A. L. Dyke.

It is not surprising that one edition of this book has been exhausted, for it is a most complete work. In twenty-nine instructions, or chapters, and with a profusion of illustrations, all well made and useful, the author endeavors to discuss the principles on which gasoline engines and automobiles are operated and built. He adheres strictly to the practical side of the subject, never indulging in theorization. The man who takes care of his own car will find this book full of useful hints and information. It propounds queries, such as are often put by a puzzled operator, and answers them. A separate chapter is devoted to "troubles."

Oxypathie. Von Dr. Wilhelm Stoeltzner, Direktor der Universitäts-Poliklinik für Kinderkrankheiten in Halle a. S. Paper. Price, 3 marks. Pp. 92. Berlin: S. Karger, Karlstrasse 15, 1911.

Stoeltzner proposes the term *Oxypathie* to cover all that is comprised in the French *arthritisme*, the English lithemia and the German *exudative Diathese*, and still further extends the ramifications of that very complex clinical picture. He finds these terms objectionable because they all unduly *emphasize one aspect* of the diathesis. The word *Oxypathie* conveys, furthermore, the idea that the essential condition in this diathesis is an acid intoxication of alimentary origin. Thus he maintains that the essential difficulty in feeding cow's milk to an infant lies in the absorption of phosphoric acid, a phosphoric acid intoxication, due to the liberation of a large amount of this acid from its normal combination with the large amount of calcium contained in cow's milk, because of the uniting of the large amount of fatty acids formed from the fat with this calcium. He believes a similar acid intoxication to be the basis of *Oxypathie* in general and finds the sovereign remedy in sodium citrate, which he considers almost a specific in infant-feeding with cow's milk, and even, under certain conditions, with breast-milk, in infantile atrophy, in infantile eczema (with almost unfailing results), in rickets, in scrofula, in asthmatic bronchitis, in lichen urticatus, cyclic vomiting, migraine, and also in the less definite manifestations, such as paleness, poor nutrition, nervousness, obesity, etc. Whether the reader will consider this new teaching as a stroke of synthetic genius, or as the elaboration of an idea dominated by an unconquerable bias, will make little difference in the enjoyment—and, we might say, profit—that he will obtain from a careful reading of the *ninety-two* pages of this rather startling little book.

The Prophylaxis and Treatment of Internal Diseases. Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M.D., Professor of Medicine, Medical College of Ohio. Second Edition. *Cloth. Price, $5. Pp. 172.* New York: D. Appleton & Co., 1910.

This is a revision in fact and not merely a reprinting of the first edition. The aim has been to bring therapy up to date, to weed out obsolete and useless plans of treatment and to include whatever of the new appeals to the author because based on scientific principles, or endorsed by reliable men, or tried by himself and found acceptable. Several new chapters—some of them very short, we must admit—have been added, on such subjects as dysentery, Rocky Mountain fever, splenomegaly, tuberculous meningitis, etc. Serum therapy receives notice. Some chapters have been entirely *rewritten*. The sincere attempt to make a *practical*, scientific work on treatment seems successful. We *might occasionally* ask for a little more detail, as, for instance, how *to use the* quinin injections in amebic dysentery. Harm may perhaps come, it is said, from using too large an amount of water, *but we are not told* how much it is wise to *employ*; or whether in any case surgery is of avail.

Dead gonococci, the so-called vaccines, are mentioned as of service in gonorrheal arthritis. This is true, but their use is really limited to the chronic forms. Other articles are much fuller. We noticed particularly the discussion of diet in the treatment of obesity; also the treatment of chronic myocardial insufficiency.

The best feature of the book is that it contains the personal experience of the author; it is not a mere compilation from the literature. Every page bears the stamp of the practical physician who has tried nearly all of the plans of treatment recommended and knows whereof he speaks. The author's wide and varied experience, his sane judgment, and his ability to express his ideas clearly, forcibly and concisely, make the book a valuable addition to the library of the practitioner who is seeking aid in the treatment of internal diseases.

Medicolegal

Skill and Care Required in Making Tests to Ascertain Nature of and Treat Injuries—Error of Judgment

The Supreme Court of North Carolina considers test requirements in the malpractice case of Long vs. Austin (69 S. E. R. 500), where it affirms a judgment in favor of the plaintiff, who alleged that her shoulder joint had become dislocated by a fall, and that the defendant, on examination, failed to discover the dislocation and to apply such remedies as were necessary to restore the shoulder to its normal condition, which could have been done by the exercise of ordinary care and skill.

The court says that the mere use of approved tests, or those which have been found to be the best for the discovery of a dislocation or fracture or any other abnormal condition of the human body, is not all that is required of a surgeon or physician in the care and treatment of his patient. He must exercise that reasonable skill, care and proficiency in making the tests and in ascertaining from them the presence of any injury and generally in the treatment of his patient which a member of his profession of ordinary care and prudence should use under the circumstances. He is not bound or confined to any special treatment, but to an ordinarily careful and skilful one.

It was requested that the jury should be instructed that if they found that the defendant used the following tests: laying her right arm across her chest, placing her right hand on her left shoulder and pressing her right elbow against her chest, then placing her right hand on top or back of her head, and measuring both arms from the shoulder to the elbow and comparing the measurements, then the defendant would have used the proper tests, and if these tests failed to disclose the dislocation of the arm, then the jury should answer in the negative the question of whether the plaintiff was injured by the negligence or want of skill of the defendant, as alleged in the complaint. The court properly refused to adopt this language and to give the instruction as requested. The defendant's application of a test, even the ordinary and usual one, was not, by itself, a full compliance with the duty he owed to his patient. The requested instruction omitted any reference to the care and skill the law required him as a surgeon to bring to the use of the test and general treatment of the case. If he made the test and failed in other respects to exercise ordinary care, skill and diligence, he was just as liable for a consequent injury as if he had not applied the test at all.

The requested instruction was also deficient in not requiring the jury to find what was the proper test, especially as the evidence on this question was not all one way. A hypothetical question should contain all the facts essential to the expression of an intelligent opinion by the expert and of which there is evidence, and not a partial statement of the facts which could not present the entire matter to the witness, so as to enable him to give such an opinion as the law permits to be considered by the jury. The application of the ordinary test would be evidence on the question as to whether the defendant had exercised the care and skill required of him, but would not be plenary or conclusive proof or be fully determinative of the fact. He may not have applied the test properly, or, if he did, he may not have possessed the requisite knowledge and skill to understand the symptoms which it disclosed, or to apply the proper remedy. It was for the jury to decide, on the evidence and under the instructions of the court, whether the defendant possessed the requisite knowledge and skill and had carefully applied them in behalf of his patient.

Again, it was requested that the jury be instructed that if they found from the evidence that the defendant made a mistake or error of judgment only in his treatment of the plaintiff, they should answer "No" on the issue of whether the defendant was injured by the negligence or want of skill of the defendant, as alleged in the complaint. The instruction, as requested, was faulty in that it left out of consideration the material question as to the care and skill required of a physician when treating his patient. The jury were properly told that the defendant owed to the plaintiff that degree of care and skill which is ordinarily practiced and possessed by the average of his profession, and not the highest known to his profession. Where a physician exercises ordinary skill and diligence, he is not liable for a mere mistake of judgment. The law does not excuse an error of judgment if it occurs by reason of the surgeon's lack of that knowledge which he should possess in order to qualify him for the practice of his profession, or the failure to exercise the requisite skill and diligence.

Christian Science Healer a Practitioner of Medicine Amenable to Law

City Magistrate Freschi, of the City Magistrate's Court of the city of New York, First Division, Second District, holds, in People vs. Cole, on an application by the New York County Medical Society, that a warrant should be issued on an information charging the defendant, a Christian Science "healer," with practicing medicine without being duly qualified and licensed.

The magistrate says that he is of the opinion that the practice of the treatment of sickness and disease by inaudible prayer, as established by the evidence in this case, violates the law of New York State. The only theory on which the defendant could claim any right to practice as a "healer" of diseases and sickness was that the reservation, stated in the public health law of the state to the effect that it should not be construed to affect the practice of the religious tenets of any church, excluded him from the operation of the definition of the practice of medicine. It is, of course, true that the state constitution grants to every person freedom of conscience in matters of religion; but, on the other hand, it specifically provides that "the liberty of conscience hereby secured shall not be construed as to excuse acts of licentiousness or justify practices inconsistent with the peace or safety of this state." The public health and the treatment of diseases are matters of great concern to all states and the subject of proper public regulation in the exercise of their police powers.

From a study of a number of cases it must be ruled that religion is beyond judicial interference so long as one keeps it to himself and does not jeopardize others; but the moment there is an invasion of the rights of the state by some overt act or conduct that tends to affect the safety and future welfare of its people, then the civil government may intervene for its own protection and preservation. Religious belief is no excuse for an unlawful act. No person under the guise of the practice of the principles and tenets of any church may violate the law of the land. A thorough and prolonged search of all decisions in point rendered in the courts of our states fails to reveal that religion or its practice has even been construed to be a business.

The Christian Scientist has the right to believe that he can heal by prayers, but this court is of the opinion that if he carries and puts that belief into practice for hire and solicits patients by advertisement, then he exceeds his rights as an individual under the law and comes directly within the prohibition of the constitution. He must subordinate his beliefs to the rights of the community and of the state as an entity when the free exercise of such belief either impairs and endangers the health of the people or tends to place their health in jeopardy so that the safety of the state will be affected. Certainly the continuance of a practice or profession to heal as the defendant claimed could be done in this case ought to be the subject of judicial review of the higher and appellate courts.

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
Am. Assn. of Pathologists and Bacteriologists, Chicago, April 14-15.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
Am. Assn. Genito-Urinary Surgeons, New York, May 1-3.
American Dermatological Association, Boston, May 25-27.
American Gynecological Society, Atlantic City, May 23-25.
American Laryngological Association, Philadelphia, May 29-31.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Therapeutic Society, Boston, May 11-13.
Arizona Medical Association, Bisbee, May 2-5.
Arkansas Medical Society, Fort Smith, May 2-5.
Association of American Physicians, Atlantic City, May 9-10.
California, Medical Society of State of, Santa Barbara, April 18.
Connecticut State Medical Society, Hartford, May 24-25.
District of Columbia, Medical Association of, Washington, April 25.
Florida Medical Association, Tallahassee, May 10.
Georgia, Medical Association of, Rome, April 19-21.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Kansas Medical Society, Kansas City, May 3-5.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Mississippi State Medical Association, Jackson, April 11.
Missouri State Medical Association, Jefferson City, May 16-18.
Montana State Medical Association, Butte, May 10-11.
Nebraska State Medical Association, Omaha, May 2.
New Hampshire Medical Society, Concord, May 11-12.
New York, Medical Society of the State of, Albany, April 18.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
South Carolina Medical Association, Charleston, April 19-21.
Tennessee State Medical Association, Nashville, April 11-13.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

Thirteenth Annual Session, held at Raleigh, N. C., Feb. 22-23, 1911

Officers Elected

The following officers were elected for the ensuing year: President, Dr. J. Howell Way, Waynesville, N. C.; vice-presidents: for North Carolina, Dr. Thomas E. Anderson, Statesville; for South Carolina, Dr. F. H. McLeod, Florence; for Virginia, Dr. W. E. Anderson, Farmville; secretary-treasurer, Dr. Rolfe E. Hughes, Laurens, S. C.; councillors: Drs. E. C. Register, Charlotte, N. C., W. W. Fennell, Rock Hill, S. C., Samuel Lile, Lynchburg, Va.

The next meeting will be held in Columbia, S. C., the third Wednesday in February, 1912.

The Hon. W. W. Kitchin, Governor of North Carolina, delivered the address of welcome.

President's Address: Preventive Medicine

Dr. Joseph White, Richmond, Va., delivered his address at a special evening session, and it was unanimously voted by the association that the address should be published, not only in the medical journals of the three states, but in some lay monthly magazine of large circulation in the South. He said in part:

The work of Pasteur, Koch, Ross and others in the last century has made possible such triumphs of modern medicine as the construction of the Panama Canal, the suppression of yellow fever in Cuba, the reduction of the death-rate from tuberculosis, the control of bubonic plague, the elimination of typhus fever, the prevention of rabies and the cure of syphilis. Preventive medicine has almost eliminated puerperal infection; has furnished specific treatment for diphtheria and cerebrospinal meningitis, and is waging a strong battle against ophthalmia neonatorum. Why should Virginia and the Carolinas be so far behind in the matter of registration of midwives? In some of our sister states this matter has been properly regulated. The medical inspection of school children and school hygiene are now recognized as the best means a state can adopt to insure good citizens in the future. The removal of tonsils and adenoids, the correction of defective vision and hearing, and the removal to outdoor schools of the tuberculous children in our schools is economy of the best sort and should be a matter of public concern.

Report on Some Patients Treated With Salvarsan

Dr. Lawrence Price, Richmond, Va.: The method of preparation of the drug for administration was an adaptation of two of Ehrlich's methods combined with that of Junkerman. In five cases I used methyl-alcohol to dissolve the salvarsan. In all of the patients the drug was injected hypodermatically into the gluteal muscles. With four no alcohol was used, the drug being dissolved with warm sterile water. The administration in one case was subcutaneous; in three, intravenous. From experience with four out of nine cases, I concluded that the Wassermann reaction does not become negative under fourteen days, when the intramuscular method is used. I have not been able to notice any difference in the rapidity of the disappearance of lesions by one method over the other, though mucous patches clear up more rapidly than skin lesions. In all of the first eight cases I am administering by mouth mercurial treatment, and intend to continue so, regardless of the finding by the Wassermann test, for a period of five or six months. The method of administration, I think, should be governed by the stage and extent of the lesions, though from the patient's standpoint, the intravenous method is more desirable because of the absence of pain afterward; but the technic of administration by this method is rather dangerous, unless extreme care is exercised to avoid getting air into the vein; and, also, care that everything used from the beginning of the preparation of the dose to the dressing of the wound should be absolutely sterile, together with close attention to the technic of intravenous injection. I believe that the desired results can be obtained by the intravenous method if salvarsan be administered during the primary and very early part of the secondary stage, before any pathologic changes have taken place in the various tissues of the body, because of the floating action of the drug when thrown directly into the circulation. In the late secondary and in the tertiary stages, a more gradual and continuous action on the spirochetes is desired, so I advise the intramuscular method. In one case reported there were untoward effects which I believe were due to overdosing with chloral; in two others, the pain down the thighs and legs did not clear up entirely for two weeks. The curative effects of salvarsan in the treatment of syphilis during any of its stages is, in my opinion, unquestionably proved, if the drug is properly prepared for administration. I believe that many of the reported untoward effects and recurrences have been due to improper dispensing.

DISCUSSION

Dr. Tom A. Williams, Washington, D. C.: The fact that we should diagnose tabes without a reaction is clear, and is illustrated by a case which I saw last autumn. There was a persistent negative Wassermann reaction, but the character of the distribution of a pain in the line of the distribution of the fifth lumbar root was so characteristic that in spite of bladder symptoms having been cleared up by proper treatment, I injected mercury and the pain cleared up in a few weeks. However, the man relapsed again in five weeks and showed positive reaction. I gave salvarsan intravenously; but the pain disappeared for only one week, the reaction becoming negative completely for one week only; the man is now taking mercury. It is a question if we should administer this drug in preference to mercury, which, properly used, can arrest lues, and even parasyphilis, as the cases of Dana and myself indicate in this country, following those of Babinski and his followers in France.

Diagnosis and Treatment of Tumors of the Breast

Dr. J. Shelton Horsley, Richmond, Va.: Knowledge of practical pathology is a necessity to any surgeon who operates on tumors of the breast. In many instances the diagnosis must be made at the operating table, as no tumor should be cut into for diagnostic purposes unless operation follows immediately. The surgeon should carry the pathology in his head and fingers and not in those of some one else. I follow the classification of Warren, dividing tumors into cancer and fibro-epithelial tumors. The latter class is subdivided into those in which the fibrous tissue predominates and those in which the epithelial tissue is most prominent. The last-mentioned tumors are likely to degenerate into cancer and usually occur late in life. I wish to emphasize two points in making the diagnosis of cancer: first, the detection of the slightest tendency to retraction; and, second, the absence of pain. The first symptom may be tested by moving the skin over the tumor, by moving the tumor within the breast substance and by moving the breast on the fascia of the pectoral muscles. The slightest limitation of motion is exceedingly suggestive of cancer. The patient should be stripped to the waist and sitting on a stool in a good light; if the shoulders are equal the nipple of the affected breast will be at a little higher level than the nipple of the healthy breast if the tumor is cancerous. If the tumor is a benign one, the nipple will be either lower or on a level with the nipple of the healthy breast. This is due to the fact that cancer cells form some product that is irritating to the tissue and tends to cause contraction, just as contraction in cirrhosis of the liver is caused by irritation. In the majority of cases a correct diagnosis can be made in the early stage by the ordinary signs and symptoms without resort to incision; but the diagnosis should always be cleared up at once whenever a patient presents herself with a growth in the breast, as the chances for permanent cure in cancer of the breast mathematically decrease with each day of delay. I have never known of pain in any cancer of the breast in the early stage, though the laity and some physicians seem to think this a constant symptom. Pain is more likely to be present in a benign tumor than in a cancer, though it is not often encountered with in any tumor of the breast in the early stages. If incision is necessary for clearing up the diagnosis, the patient should be prepared for immediate operation, either radical or local, depending on the diagnosis that the incision will show. There is practically no danger in following an incision immediately by operation, but to incise a cancerous growth and operate a day or two later invariably results in recurrence. If the growth incised is a benign tumor, it will bulge into the wound and its capsule will retract. If it is cancerous, there will be no distinct capsule and the growth will lie flat as though the incision had been made into a piece of wax. If the growth is cystic and is cancerous, its contents will be either dark and grumous or bloody and the wall of the cyst will be thickened throughout or in patches. If the cyst is benign the wall is thin and its contents will be either clear or straw-colored. I advise local extirpation in benign tumors and radical operation in cancer, beginning at the axilla and excising all of the material with a wide margin of skin in one mass.

DISCUSSION

DR. J. T. BURRUS, High Point, N. C.: I am much interested in cancer, and spent the greater part of last year in a cancer hospital. I am convinced that to lower the mortality from cancer in this country we must make an early diagnosis and then do a sufficiently radical operation. There is nothing closer to criminality than to go into cancer substance. I remember a case of a melanotic sarcoma in which the surgeon had gone into the cancer substance, and in less than six weeks metastasis had developed in the supraclavicular glands and the glands of the neck, on both sides.

DR. J. W. LONG, Greensboro, N. C.: One phase of this subject which I think should not go unnoticed is the contagiousness of cancer. Just one illustration: It had been noticed that the fish in certain pools in the State of New York were subject to cancer of the thyroid gland, and this was observed so constantly that, in order to test the matter, young puppies were brought from another section of the state and allowed to drink water only from one of these pools that contained cancerous fish. In a short time every one of the puppies developed carcinoma of the thyroid.

DR. G. P. LAROQUE, Richmond, Va.: The best way to cure cancer is to prevent it, but if it has already developed we should remove it at the earliest possible moment. Therefore, every tumor of the breast, even when not obviously cancer, should be removed at once and subjected to microscopic examination by a competent pathologist. It seems to me a little illogical to make a diagnosis by the absence of anything, and [illegible]lly by the absence of pain. A tumor which is actually [illegible] If not painful may be complicated by traumatism or [illegible]tion and become the seat of pain, even though cancer is not painful. As a matter of fact, a large number of cancers of the breast are secondary to mastitis and mastitis is necessarily painful.

The Cancer Committee

The association, through this committee, is waging active warfare against cancer in an effort to lessen materially the 80,000 deaths from this cause in the United States each year.

The present committee was unanimously continued for another year. This committee will be divided into sub-committees, with Dr. Horsley of Virginia, Dr. Rankin of North Carolina, and Dr. Williams of South Carolina, as chairmen, and the members will meet within these three states several times each year. They will prepare circulars and distribute them as widely as possible, the council being requested to furnish funds for this purpose. The boards of health have promised their cooperation, and each member of the association has been urged to do his part toward educating the public in the prevention of this disease. In addition, literature on the subject is to be sent to the members of the association, fully disclosing the plans and purposes of the committee, and the lines on which they will be asked to cooperate in educating the laity.

The Conservation of Sight

DR. J. W. JERVEY, Greenville, S. C.: The preservation of the public sight must be a great factor in the development of a people. Sins are daily being committed by a modern civilized people on a nation's eye-sight; but all the errors are preventable and many of them easily so.

The factors injuring vision are as follows: Ophthalmia neonatorum; pernicious activity of the so-called optometrists; the advertising eye doctor; the white incandescent mantle and electric bulb; badly printed newspapers and school books; badly lighted schools; unsuitable school desks; kindergartens; moving-picture shows; antipathy to the use of glasses.

DISCUSSION

DR. ROLFE E. HUGHES, Laurens, S. C.: I desire to emphasize especially one point: the prevention of ophthalmia neonatorum. I wonder why more obstetricians do not make it a rule to use a prophylactic remedy of from 1 to 2 per cent. silver nitrate. I have for years done that as often as I ligate the umbilical cord. And I might add, in the case of the male, a circumcision would be another good step at this time.

At the conclusion of Dr. Jervey's paper a motion was made, and unanimously seconded, that the Tri-State Medical Association request that Dr. Jervey's paper be published in one of the leading national weekly or monthly lay magazines as a contribution from the association to the education of the people. The motion was adopted.

Rheumatism

DR. J. N. UPSHUR, Richmond, Va., discussed the causation of rheumatism, his deductions from reports of investigations to the present day being that the causation of rheumatism from a germ has not yet been satisfactorily established, and clinical observation shows that the best results come from treatment on the old theory of unbalanced metabolism. He emphasized the use of alkalies, notably, bicarbonate of potash, until the secretions become neutral; following this up by the administration of some one of the salicylates, the best results are obtained, with much diminished risk of heart involvement. He recommended ammonium carbonate, in doses of from 5 to 10 grains every two hours, as a most satisfactory remedy in the treatment of endocarditis, minimizing the risk of emboli, and subsequent damage to the heart valves.

DISCUSSION

DR. J. N. WALTON, Richmond, Va.: It was shown more than thirty years ago that the combined Fuller, or alkaline treatment, with the salicylates would reduce the heart complications to the minimum. Bicarbonate of potassium or sodium, well diluted in water, should be given frequently enough to keep the urine alkaline; the nurse should be supplied with litmus paper and the urine should be tested for acidity several times a day. The salicylates are liable to ruin the digestion and the least objectionable is the effervescing salicylate of strontium to be given well diluted in cold water. In chronic rheumatism the treatment should be dietetic and eliminating, and experience has abundantly established the value of hydrotherapy and electricity over all other agents in the successful treatment of this type of rheumatism.

DR. DOUGLAS VANDERHOOF, Richmond, Va.: In this connection I would call attention to a paper published several years ago by Dr. T. W. Clarke, of the Lakeside Hospital, Cleveland, Ohio, in which he advocated the use of large doses of sodium salicylate at the onset of acute arthritis. He gives 30 grains of sodium salicylate every four hours for eight doses—half an ounce of the drug in thirty-two hours. In acute rheumatic fever this treatment promptly relieves pain, and also reduces the fever and the swelling of the joints, whereas in acute gonorrheal arthritis the symptoms are not so marvelously alleviated. In a rather large series of cases of acute rheumatic fever, these massive doses were found to be not injurious to the heart but rather served to protect that organ by cutting short the course of the disease. In my hospital experience I had good opportunity to prove the value of this procedure in the differential diagnosis of certain cases of acute arthritis.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Annual Meeting, held in Chicago, Feb. 27-28, 1911

(Concluded from page 997)

Report of Judicial Council

The judicial council reported favorably on the applications for membership of the Medical Department of the University of Minnesota, Northwestern University Medical School, and the Medical Department of Syracuse University.

A number of recommendations made in this report were acted on in general meeting, and have appeared elsewhere.

Report of Committee on Medical Education

After considering the question of a five years' course, the committee did not deem it wise to present a schedule for consideration at this time. The present unsettled condition of medical legislation in the states of the Union, coupled with the uncertainties that exist among the colleges, has left the subject in a state of uncertainty which precludes the presentation of any schedule. The questions that confronted the committee were: 1. Shall the fifth year be a terminal one to the present four years' course and limited to clinical training, or shall a part of the time be given to the study of medical sciences in the beginning of the course? 2. In the states where legislative enactments have advanced the requirements beyond a high-school standard, no provision has been made as to whether the course shall be given absolutely in a literary college or as a preliminary course in a medical college. The trend of legislation, however, has been toward the literary training rather than increasing the medical curriculum. The difficulties in the way are that very few of the literary colleges are equipped to give a definite premedical course, and very few are willing to change their present curriculum to accommodate the medical colleges. The committee did not deem it wise for the association to adopt any prescribed schedule for a five years' course, but believes that the colleges in membership in the association should urge on their graduates the necessity for a hospital year before entering practice, and that proper inducements should be offered them to take the course.

With regard to the concentration method of teaching, no definite conclusions were given. Many colleges have already adopted the method in part, but none are ready to recommend or reject the system. At the suggestion of the committee, the matter was laid over for one year. The following resolutions were presented by the committee and adopted.

WHEREAS, The time devoted to the study of pharmacology, materia medica and therapeutics is necessarily limited, and

WHEREAS, The thorough knowledge of a small but representative group of medicaments is conducive to scientific progress in therapeutics; therefore, be it

Resolved, That the Association of American Medical Colleges commends to the attention of medical educators and examiners the limited materia medica lists published by the joint committee of the Council on Medical Education, and of the National Confederation of State Medical Examining and Licensing Boards, and the Chicago Medical Society.

Resolved, That the association urge on the colleges and the examining boards the necessity for the recognition of the principle underlying these lists, and for the early adoption by the boards of a materia medica list to which licensure examinations shall largely be confined.

The committee approved of and commended the suggestion made by the president in his address that wider cooperation of the members in the work of the association would be of benefit, and, further, that the president be authorized to appoint a representative from the association to attend all the conferences, public and private, of the Council on Medical Education.

The Fifth Year in Medicine: The Hospital Year

DR. F. F. WESBROOK, Minneapolis: In presenting the plan which has been adopted in Minnesota for a fifth or hospital year, it is apparent that the viewpoint is not simply that of the welfare of the medical college but that of the good of the people of the state. It is recognized that what may be advantageous for a state situated as is Minnesota may be quite unsuitable or impracticable for other states where conditions are radically different. In order to secure the opinion of those in Minnesota who are specially interested, written information as to the desirability of a fifth or hospital year was obtained from representatives of various hospitals, of the medical press, from influential members and officers of the Minnesota State Medical Society, members of the Minnesota State Board of Health, of the Minnesota State Board of Medical Examiners, medical officers of state institutions and other similar sources. The requirement was announced last year and goes into effect with the class entering college in September, 1911, which means that compulsory internships must be provided in 1915. This affords four years' time for the final perfection and announcement of methods. A committee of the faculty of the College of Medicine and Surgery has been appointed to perfect final arrangements. Since this committee has not yet reported, it is impossible at this time to give the details of the plan as it will be put into operation.

At present 90 per cent. of the students voluntarily take internships, so that the carrying into effect of the announced plan will mean simply the requirement of one more year of service for a few students. To make these requirements compulsory for all will, however, protect the state in a number of directions. The plan provides a further year of collegiate supervision for students before they are granted degrees. It protects the college and the state against the granting of degrees to those who may be satisfactory students but who may prove to be unfit, incompetent or unpractical in the care of patients. For the hospitals, advantage is secured in providing a stimulus to better work and sustained service on the part of interns, since the degree will be withheld unless the hospital service of the student is satisfactory to the proper authorities. For the successful carrying out of the work, the state university must establish a set of requirements as to the size and scope of hospitals, methods of organization, facilities for scientific work and case records, and such other details as may prove necessary to standardize the hospitals for the purposes of this fifth or clinical year of medical education. It is believed that hospitals so standardized will welcome affiliation with the university. The further opportunities it provides for medical and public health cooperation in the state and in furnishing an added stimulus for each hospital to become a scientific center for the physicians of the locality are apparent. The available internships in Minnesota will far outnumber the local candidates for the positions. The university hospitals, when completed, will provide a large share of the required positions. The Minnesota State Board of Medical Examiners, according to the law, does not require graduation but demands of its candidates for licensure four years of work in a recognized medical college and two years of premedical college or university work, which is equivalent to that provided by the University of Minnesota. These equivalents are determined for the Minnesota State Board of Medical Examiners, as in the case of students entering the College of Medicine and Surgery, by the Registrar of the University, or when necessary, by the Enrolment Committee of the College of Science, Literature and the Arts of the University of Minnesota. Whether the future graduates of the College of Medicine and

Surgery shall be required to take their examinations for license to practice medicine at the end of the fourth year or college course or at the end of the fifth year or hospital service has not been determined. Nor has it been decided whether it is desirable to substitute graduate research work for the hospital year in the case of those who wish to qualify, not for medical practice, but for teaching and research posts. It has seemed to the people of Minnesota that owing to the increase in present-day knowledge in chemistry, physics and biology, and in their increased applicability to the diagnosis, prevention and cure of disease, nothing less than seven years of university and clinical work should be demanded of candidates for a medical degree after graduation from an accredited high school.

DISCUSSION

Dr. John M. Dodson, Chicago: In schools which have the college requirement for admission, the time is ripe for the addition of the hospital year. Rush Medical College has had an optional fifth year for some time, but cannot make it compulsory because in Illinois a degree is necessary for licensure and the student must have a license in order to become an intern. The difficulty, however, is not in finding openings for the students, but to find students enough to fill the places. The chief difficulty would be on the side of the hospital, though this educational movement would be as good for the hospitals as for the students. Many hospitals are not adequately equipped and are not careful enough about having the work done properly. Interns are burdened with routine work and are obliged to look after too many patients. No intern should have more than twenty-five or thirty beds under his direction at one time, in order to make a proper study of his patients. In the University of Chicago, the intern is under the personal charge of some member of the faculty, who investigates the hospital and keeps in touch with the intern's work. The intern is also required to do some original work and present a thesis, which I regard as a most important thing, during his hospital year.

Dr. F. C. Waite, Western Reserve University: In Cleveland, we are able to place every man in a hospital, but we find that there are different grades of men as there are different grades of hospitals, and we propose to allow them to distinguish themselves in a way. The student will do a certain amount of work on which he is to report, and he must do something in the way of original work. When that is creditably done, he is to get an additional degree—Master of Medicine. His special work need not necessarily be medical, but may be laboratory or anything pertaining to his medical education. In this way we hope to induce men to go into hospitals.

Dr. H. A. Christian, Harvard University: It is desirable that every man who is to practice medicine should have practical experience in a hospital. Conditions in the east are not as they are in Minnesota. I would favor the plan outlined by Drs. Dodson and Waite. Unfortunately, the colleges of to-day are not in the position to assume the burden of a fifth year, and many schools would have difficulty in placing their students in hospitals because they do not control sufficient hospital positions. It would be well to await the outcome of the trial which is to be made by the University of Minnesota. The college may require five years, or it may furnish an incentive by offering an honorary degree for good work or make a practical degree necessary for licensure. That would give the student freedom in selecting his hospital. Many men go into laboratory work who would not be particularly benefited by hospital training, and yet the practical experience of hospital service is not to be undervalued. It seems desirable to require such a training of every man going into the practice of medicine, but not of the man preparing for work other than general practice. At the same time, I would favor the demand on the part of the licensing board of a practical hospital experience.

Dr. Egbert LeFevre, University and Bellevue Hospital Medical College: Everyone appreciates the need for the year of hospital work. In many localities it can only be postgraduate, as yet, and we can only recommend it as such. I am not in favor of having it made obligatory in the present state of control of hospitals. Hospitals are unwilling to consider themselves as adjuncts to the medical college, and until we have educated the hospital boards to the desirability of this close connection, we cannot require a fifth year.

What the Internist Wants the Anatomist and Physiologist to Teach

Dr. Benson A. Cohoe, University of Pittsburg: The business of the medical school is to produce physicians who can heal the sick; the teachers of anatomy and physiology may direct their teaching toward practical ends or they may treat their subjects in a broadly scientific manner. An attempt has been made on the part of some medical schools to bridge over the more or less real gap that exists between the teaching of anatomy and physiology as pure science or in practical application to the clinical branches. Courses in topographic, applied, surgical and medical anatomy are offered by many schools, either as elective or as required subjects. Only two schools offer a special course in medical anatomy; one school offers a course in applied physiology; seven give courses in pathologic physiology; one school gives a course in medical technics. Clinicians desire that both anatomy and physiology be taught in a broadly scientific manner. The teaching of isolated facts of so-called practical value, at the sacrifice of fundamentals, would be a grave error. The most fitting place for the student to acquire a knowledge of anatomy for practice is in the dissecting room. The special course in medical anatomy, distinct from surgical anatomy, can be made of considerable aid, and should be taken up by the instructor in physical diagnosis. In such a course the living model should be employed.

To urge a greater practical application of physical facts is, under present conditions of physiologic knowledge and teaching, entirely unnecessary. A wise plan adopted in a few schools is to allow the student to choose some special field for exhaustive experimental work with the aim of teaching him thoroughness and initiative in his methods of work as a student and methods of precision in the study of his cases as a physician. The consensus of opinion is that that student is best prepared for the practice of internal medicine who has been trained in a school where these primary branches are taught as pure sciences, and where, not unmindful of their practical application, the imparting of the fundamental principles of these sciences is regarded as paramount, and in which no attempt is made at a short cut to the goal of medical learning by keeping practical facts ever in the foreground at the expense of pure science.

What the Surgeon Wants the Anatomist and Physiologist to Teach

Dr. C. B. G. de Nancrede, University of Michigan: Those teaching in schools where the scientific side of the subjects under consideration are largely ignored in favor of the so-called practical aspects overlook or underestimate the fact that where the scientific side is not neglected better results are obtained. Yet it cannot be denied that there is room for improvement in securing the knowledge of anatomy and physiology which the surgeon needs. The advantages of the old system of acquiring anatomic and physiologic knowledge must not be overlooked. I would earnestly protest against curtailing the scope of instruction on these important subjects. It is not the fault of too much science, but too little, or at least the proper proportion at the proper time, and no amount of so-called teaching of practical anatomy will give the student such a spirit of catholic knowledge and interest in anatomy as a proper combination of the scientific with the miscalled practical. The surgeon wants anatomy taught with as broad a scientific foundation as feasible, supplemented by such a sharp presentation of the facts of general anatomy as will show what structures must be injured during any operation in a given region, what may be injured or destroyed, and what must not be injured, much less sacrificed. Would it not be possible to hold over the student's head the certainty that the internist and externist will hold an examination, the one on physiology, the other on anatomy, as part of the final examinations for a degree? In this way the advantages of the old and new methods would be combined. A proper knowledge of scientific as well as so-called surgical anatomy is of equal importance in the diagnosis of surgical conditions as in their treatment. The same is true of physiology. The surgeon needs these aids, while the teacher cannot successfully instruct when students do not possess them.

DISCUSSION

Dr. E. P. Lyon, St. Louis University: Anatomy and physiology should be taught from the scientific standpoint and not merely to point out the features thought to be of practical value. I believe that there should be in the medical school a man who has not the M.D. degree, but who is really well versed in one of these sciences. We need the trained anatomist rather than the physician who can teach anatomy.

Dr. H. A. Christian, Harvard University: We have too many separate courses in our curriculum to-day. It seems to me that it is not desirable to have separate practical courses in anatomy or physiology. The anatomist and physiologist must give his time to teaching the fundamental principles. The internist and surgeon must teach these subjects as applied sciences.

Dr. B. D. Myers, University of Indiana: It seems to me that applied anatomy is a very necessary part of the medical course. The student should have it as a foundation for physiology, medicine and surgery, and therefore it should be taught in the beginning of the course.

Dr. J. S. Ferguson, Cornell University: The anatomy from the side of the internist demands not so much the knowledge of the dissecting room as it does an accurate knowledge of the conditions in which the tissue exists in the body as shown first by the gross appearance; second, by its macroscopic structure, and, third, the application of the whole structure to the function of the organ.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

March 23

1 Popular Fallacies About Insanity. H. R. Stedman, Brookline, Mass.
2 The New England Pediatric Society. J. L. Morse, Boston.
3 When Shall We Remove Tonsils and What Type of Operation Shall We Do? E. A. Crockett, Boston.
4 Secondary Efforts to Hasten Healing After Mastoidectomy. H. O. Reik, Baltimore.
5 The Alleged Increase of Nervous Diseases. P. C. Knapp, Boston.

Medical Record, New York

March 25

6 *Injection of Drugs, Especially Salvarsan, Into the Lumbar Muscles. S. J. Meltzer, New York.
7 An Investigation of Recent Outbreaks of Typhoid in an Adirondack Camp, and the Discovery of a Typhoid Bacillus-Carrier. C. E. North, New York.
8 Principles Underlying the Surgery of the Spinal Cord and the Nerve Roots. R. S. Fowler, Brooklyn, N. Y.
9 The Roentgen Rays as a Means of Diagnosis of Carcinoma of the Stomach and Bowel. G. E. Pfahler, Philadelphia.
10 Nauheim Methods in Management of Cardiac Disease. L. F. Bishop, New York.
11 *Bilateral Fibromyoma of the Broad Ligament. E. H. Eising, New York.
12 *Diagnostic Value of Tuberculin as Shown by Nineteen Autopsies. G. W. T. Mills, Central Islip, N. Y.
13 Prophylaxis Against Uncinariasis Infection by Means of Efficient Shoes. W. F. Arnold, U. S. Navy.

6. **Injection of Salvarsan into Lumbar Muscles.**—On the basis of experimental observations, Meltzer offers: first, the suggestion in a general way, that in medical practice injections of drugs should be made into the lumbar muscles, especially in cases in which a rapid effective action is urgently needed. Second, he states specifically that salvarsan should be injected into the sacrospinal muscle. This muscle presents anatomically an exceptionally well-isolated, large, compact mass, densely packed with fine muscle bundles. Any solution or suspension injected strictly into this mass will remain there and not affect locally the adjacent tissues. Experimentally, Meltzer found that the absorption from this muscle is superior to that from the gluteal muscles and vastly superior to that from the subcutaneous tissue. Clinically, it was established in a limited number of cases of syphilis that salvarsan injected into this muscle exerts a fairly rapid, unmistakably beneficial influence on secondary and tertiary manifestations of syphilis and on the Wassermann reaction without causing pain and other ill effects deserving any serious considerations.

11. **Bilateral Fibromyoma of the Broad Ligament.**—The case reported by Eising is unique inasmuch as it is bilateral, and the masses were not cystic. Owing to the intimacy between the tumors and the body of the uterus, a hysterectomy was done, removing simultaneously the intraligamentous tumors. The patient made an uneventful recovery. The microscopic examination of the tumor showed it to be a fibromyoma. The dimensions of the entire mass including the uterus were: Laterally, 7¼ inches; vertically, 4½ inches; anteroposteriorly, 3¾ inches.

12. **Diagnostic Value of Tuberculin.**—Of 135 cases in which the eye test was made by Mills, nineteen came to the post-mortem room. There were ten cases of advanced disease. Of these, four cases can be considered. One gave absolutely no reaction, two gave only slight reactions, and the fourth gave a negative reaction on the first trial, a positive on the second, but this was in the same eye and is without value. The patients all died within a comparatively short time (from three days to thirty-five days), and the results correspond with the results of others and with those of the injection method, that is, in advanced or very active cases, especially just before death, the reaction is absent or slight. The other six cases were positive; all but one patient lived a considerable time beyond the test, and the disease was not in so active or advanced a stage at the time of test as in the four above described. In the one exception, the primary cause was Addison's disease. The next group included cases with scars and evidences of former tuberculosis, nothing of an active nature being present at death. In this group there were seven cases. Three of these were negative; one gave only a questionable reaction at the end of sixty hours, and three gave positive reactions. This proves conclusively, Mills says, that old, healed lesions can give positive reactions, and strongly positive ones, but at the same time shows that a negative reaction does not exclude an old lesion. The third group includes two cases with negative autopsy findings, and both gave negative reactions. Mills has found that from 20 to 25 per cent. of insane patients will react to the ophthalmo-tuberculin test, in whom no demonstrable lesions can be found, but it is probable that in all of them an old focus will be found post mortem. Therefore, a positive reaction in the absence of clinical signs is of no significance, but a negative reaction, except in advanced or very active cases, positively excludes tuberculosis. Mills regards the test as being as reliable as any other tuberculin test, more reliable than most methods, and easy of application in any class among the insane. With strict aseptic precautions, he believes the danger to be infinitesimal and so far has seen no injurious effects.

New York Medical Journal

March 25

14 The Problem of Prostitution and Venereal Diseases in New York City. F. Bierhoff, New York.
15 Simplified Treatment of Anorectal Diseases. S. G. Gant, New York.
16 Presence of Intestinal Parasites in Inmates of the Philadelphia General Hospital. R. C. Rosenberger, Philadelphia.
17 Zinc Oxid in Face Powder. S. S. Cohen, Philadelphia.
18 Hints for Mastoid Dressings. E. Amberg, Detroit.
19 Non-Suppurative Osteomyelitis. J. C. Stewart, Minneapolis.
20 Bismuth in Gastric Therapy. A. Goldman, New York.
21 Picric Acid, a Retrospect. A. Ehrenfried, Boston.
22 Vaccine Therapy. C. T. Russell, Jr., Philadelphia.

Lancet-Clinic, Cincinnati

March 25

23 Interpretation of Jaundice. C. N. Smith, Toledo, Ohio.
24 Anterior Poliomyelitis: Pathology and Bacteriology. W. H. Peters, Cincinnati.
25 Etiology of Epidemic [illegible] sible Relation to Beriberi. O. v. [illegible]
26 Clinical Manifestatio[illegible] of Poliomyelitis. M. Dreyfoos, Cincinnati.
27 Orthopedic Management of Paralysis Due to Acute Anterior Poliomyelitis. R. D. Maddox, Cincinnati.

Journal of the Missouri State Medical Society, St. Louis

March

28 Emergency Cases in Eye, Ear, Nose and Throat Work, with Suggestions for Their Care by General Practitioners. J. S. Weaver, Kansas City.
29 Convergent Strabismus. J. W. Sherer, Kansas City.
30 Progress in Surgery. H. L. Reid, Charleston.
31 Resection of the Large Intestine for Malignant Disease. C. M. Nicholson, St. Louis.

32 The Evolution of the Trained Nurse. M. A. Goldstein, St. Louis.
33 Gastroptosis. J. W. Ousley, Kansas City.
34 Modern Life vs. Longevity. E. C. Robichaux, Excelsior Springs.

American Journal of Diseases of Children, Chicago

March

35 *Physiology and Pathology of the Digestion of Fat in Infancy. F. B. Talbot, Boston.
36 *Bacteriology of the Blood in Early Life. F. S. Churchill and C. P. Clark, Chicago.
37 *Metabolism of Nitrogen, Phosphorus and the Purin Substances in the New-Born Infant. O. M. Schloss, New York, and J. L. Crawford, Troy, Texas.
38 *The Non-Specificity of the Cell Findings in the Spinal Fluid in Various Meningeal Conditions, Especially in Children. W. P. Lucas, Boston.

35. **Digestion of Fat in Infancy.**—Talbot points out that there is no doubt that large amounts of fat can do a great deal of harm to most babies. Such babies come under two classes—those which have a normal digestion and are unable to digest excessive amounts of fat, and those which have diminished powers of digestion and are unable to digest normal amounts of fat. So much attention has been paid to the few babies that are unable to digest fat, that one is apt to forget that most babies can digest fat within reasonable limits. In Talbot's experience, it has been safe to increase the percentage of fat gradually up to 4 per cent. in most normal babies whose digestive powers have not previously been lowered by gross errors in feeding or by infection. These children develop normally without any of the signs or symptoms of fat indigestion so long as their hygiene is perfect and they have no intercurrent infection.

36. **Bacteriology of the Blood.**—Churchill and Clark made sixty-nine examinations on sixty-four infants and children during life, and studied sixteen cases post mortem. The blood was obtained by the usual method—from the median basilic vein just above the elbow. In two cases of suspected typhoid it was obtained from the lobe of the ear, as recommended by Peabody. Various kinds of syringes have been used, but the Luer glass syringe has been the most satisfactory. The blood thus obtained has been mixed immediately at the bedside with various media: in most of the cases two tubes of bouillon, two of agar and agar plates have been inoculated. In five of the typhoid cases, ox bile has been used in the medium, with positive results in all. A case of suspected typhoid in which bile medium was used was negative, but proved later to be a case of tuberculous meningitis. In the sixty-nine examinations made, the authors obtained nineteen positive results. Combining Rotch's series, their own and a few scattering reports in the literature, the authors found thirty-one cases of typhoid fever, in twenty, or 66 per cent. of which, bacilli were found in the circulating blood. Furthermore, the bacilli were found as early as four days before the onset of symptoms and as late as the twenty-second day. These results were obtained with all kinds of media and at all periods of the disease. Of fifteen cases of lobar pneumonia and three of lobular pneumonia, four of the former were positive and one of the latter, the organism found being the pneumococcus in every instance. Thus in the eighty-five cases comprising their own and Otten's series, thirteen, or 15 per cent., showed pneumococci in the circulating blood.

In the group of rheumatic affections, they included cases of endocarditis, arthritis, tonsillitis and chorea, these manifestations occurring either singly or in combination with each other. There were seven cases of endocarditis; all had chronic endocarditis; in five of the cases, the cultures were taken during a febrile stage, due either to tonsillitis, arthritis, or to an unknown cause, possibly an acute exacerbation of the chronic endocarditis. There were two cases of chorea, and in both of these the temperature was normal when the cultures were taken. Cultures were negative in all seven of the cases. They examined four cases of meningitis with two positive results. In the tuberculous case the patient was examined on the tenth day of the disease as a suspected typhoid patient. One case each of pyelitis, erysipelas and acute nephritis gave negative blood-cultures. Catheterized specimens of urine from the cases of pyelitis and acute nephritis showed a streptococcus in the former and nothing in the latter. One case of acute lymphocytic leukemia showed the streptococcus in the blood one week before death.

They have reports on the bacteriology of the heart's blood in seventeen cases, of which thirteen showed positive results. Three cases of special interest were one each of hemorrhagic disease of the newly born, erysipelas and status lymphaticus. The hemorrhagic disease showed in the heart's blood the *Staphylococcus aureus*, the *Bacillus coli*, the streptococcus and an unidentified diplococcus midway between the pneumococcus and the streptococcus. Of the four cases with a sterile heart's blood, three were as follows: a pyelonephritis due to the *B. pyocyaneus*, an otitis with a general septicemia, but with entirely negative post-mortem results, and a meningococcic meningitis. The fourth case was endocarditis in which the antemortem blood was also sterile. The organisms recovered post mortem were as follows: the staphylococcus six times (*S. aureus* five times, *S. albus* once), the streptococcus eight times, *Bacillus coli* three times, the *Diplococcus lanceolatus* one time, and an unidentified diplococcus.

37. **Metabolism of Nitrogen.**—Uric acid infarct elements were present in the urine of each of nine new-born infants examined by Schloss and Crawford. They state that the uric acid output in new-born infants is both absolutely and relatively high. It is greatest during the first three days and then decreases. In cases in which the umbilical cord was ligated late, the output of uric acid was greater during the second and third days than in cases in which the cord was ligated immediately after birth. The quantity of the purin substances in the colostrum ingested is too small to explain the observed high uric acid output. The total phosphorus excretion was high during the first three days and then showed a sharp diminution. There is marked retention of phosphorus by the new-born infant. There is a moderate nitrogen retention during the first three days of life; later, nitrogen is retained in large degree. There is an inverse ratio between the leukocyte count and the elimination of phosphorus and uric acid during the first few days of life. In the light of present knowledge, the parallelism between the excretion of uric acid and phosphorus during the first three days would seem to indicate a common origin from cell nuclei. The greatest excretion of uric acid in the late ligation case suggests that the formed elements in the blood in some way serve as its origin.

38. **Non-Specificity of the Cell Findings.**—From Lucas' study, it is evident, first, that there are many conditions that give the same cytologic findings in the spinal fluid: (a) encephalitis, (b) epidemic myelo-encephalitis, (c) meningismus, (d) tuberculous meningitis, (e) syphilis of the central nervous system; second, that the presence of mononuclear cells, or lymphocytes, in the spinal fluid cannot be the basis for a diagnosis of tuberculous meningitis; third, that the recovery from animal inoculation, or the finding of the tubercle bacillus microscopically are the only positive means of making the diagnosis of tuberculous meningitis; fourth, that the study of the spinal fluid, although very important, must go hand-in-hand with more careful clinical studies of such border-lying cases as the ones shown in the different tables.

Journal of the Tennessee State Medical Association, Nashville

March

39 Action of the Arylarsonates on the Eye. E. C. Ellett, Memphis.
40 Foreign Bodies in the Eye. R. Fagin, Memphis.
41 Placenta Prævia. A. T. Clopton, Milan.
42 Sprained Ankle. D. Eve, Jr., Nashville.
43 Treatment of Acute Inflammations of the Middle Ear. G. C. Savage, Nashville.

Surgery, Gynecology and Obstetrics, Chicago

March

44 *Clinical and Pathologic Significance of Obliteration, Carcinoma, and Diverticulum of the Appendix. W. C. MacCarty and B. F. McGrath, Rochester, Minn.
45 Distention Changes in the Duodenum in Chronic Intestinal Stasis. W. A. Lane, London.
46 *Intestinal Obstruction Due to Kinks and Adhesions of the Terminal Ileum. C. H. Mayo, Rochester, Minn.
47 *Teratoma Testis and Its Derivatives. J. Ewing, New York.
48 *Osmosis as an Important Factor in the Action of Antiseptics. M. G. Seelig and C. W. Gould, St. Louis.
49 Hernial Tuberculosis. V. L. Schrager, Chicago.
50 Suppuration in the Retroperitoneal Space. R. H. Huggins, Pittsburg, Pa.

51 *Surgical Treatment of Undescended Testicle. C. Davison, Chicago.
52 *Case of Complete Amenorrhea, with Heredity as a Probable Etiologic Factor. A. R. Hoover and J. K. Marden, Marsovan, Turkey.
53 Operative Treatment of Difficult Cases of Palate Defect After Infancy. V. P. Blair, St. Louis.
54 Vertebral Fracture; Insertion of a Wire "Back-Stay." F. J. Cotton, Boston.
55 *A New Bag for the Hydrostatic Dilatation of the Cervix Uteri in Pregnant and Parturient Women. A New Hook for Decapitation. B. C. Hirst, Philadelphia.

44. **The Appendix.**—This series of cases studied by MacCarty and McGrath confirms the percentage of obliteration found in the appendix by other observers. Obliteration seems to occur as the result of an inflammatory process as shown by its histology, the time of occurrence, its irregularity of occurrence, the duration of the process, and the higher frequency in appendicitis than at necropsy is general. Many appendices become acutely inflamed during the process of obliteration and therefore an obliterated appendix should be removed, if possible. Carcinoma may occur at practically any age. It was impossible to make the diagnosis of carcinoma from the external appearance in 77 per cent. of the cases of carcinoma. The high frequency of carcinoma in obliterated or partially obliterated appendices may demand removal of all partially or completely obliterated appendices. Carcinoma of the appendix occurs in association with changes in the appendix which are related to the process of obliteration. Carcinoma of the cecum probably arises from the appendix only in a very small percentage of the cases.

46. Abstracted in The Journal, Jan. 28, 1911, p. 298.

47. **Teratoma Testis and Its Derivatives.**—The conclusion drawn by Ewing from the study of teratoma testis would seem to have important bearing on the origin of tumors in general. It seems unlikely that the conditions surrounding the genesis of this group of tumors are wholly different from those prevailing with tumors in other organs, notwithstanding the fact that in the testis one has to deal with "totipotent" sex cells not occurring elsewhere. In the testis one enocunters a wide variety of neoplasms, from the most undifferentiated, diffusely growing, highly malignant, round cell tumors, up to fully adult and harmless tissues and organs, all of which appear to have one and the same origin, the slow or rapid unfolding of original potencies of sex cells. These facts seem to Ewing wholly irreconcilable with any relation to any external parasite, but reveal in a striking manner that most important of all facts known about the origin of neoplasms—that embryonal cells possess more than any others the essential factors in the inception of tumors.

48. Abstracted in The Journal, Jan. 21, 1911, p. 218.

51. **Surgical Treatment of Undescended Testicle.**—The principle of Davison's operation depends on the direction of the spermatic vessels immediately above the beginning of the spermatic cord at the internal inguinal ring and the possibility of lowering the whole cord by the transplantation of these vessels. The operation consists of the following technic: The inguinal canal is exposed by dissection as in the Bassini operation for inguinal hernia. The testicle and cord are freed from the inguinal canal and ring and temporarily laid above the wound out of the operation field. The treatment of the posterior wall of the inguinal canal is very similar to that in the Fowler operation for inguinal hernia. After a preliminary double ligature of the deep epigastric hernia, an incision is made through the posterior wall of the inguinal canal, from the internal inguinal ring to the pubic bone just beneath the site of the external ring. This destroys the internal inguinal ring and exposes the peritoneum with the vas deferens and spermatic vessels lying on it attached by loose cellular tissue. When congenital hernia is present or the processus vaginalis is patulous, the peritoneal layer is carefully separated from the cord and cut across. The distal part is allowed to cover the cord and testicle. The opening in the peritoneum is closed. The reduplicated vas deferens is easily separated by gauze dissection from the peritoneum until the desired length is attained. The external edge of the cut transversalis fascia is sharply retracted outward, exposing the spermatic vessels for some distance. The preservation of these structures with the natural blood-supply gives the best prospect of the physiologic and functional development of the testicle.

A bed for the testicle is made in the scrotum. A silkworm-gut suture is passed through the gubernaculum testis and both ends are passed through the most dependent part of the scrotum. The testicle is located in the scrotum. The cut in the transversalis fascia (the posterior wall of the inguinal canal) is repaired. The cord is made to come through at the lower angle of the incision. The internal inguinal ring is closed. The conjoined tendon is sutured to the under side of Poupart's ligament above the cord. The fascia of the external oblique muscle is sutured to the edge of Poupart's ligament above the cord. The skin wound is closed. A strip of adhesive plaster is placed around the thigh just above the knee, with a flap on the inner side of the thigh. To this flap is fastened a thin rubber letter band. The suture through the bottom of the scrotum is tied to the rubber band with only sufficient tension to make the band taut. The usual aseptic dressings are applied. A light plaster-of-Paris body cast or starch dressing is used to prevent flexion of the thigh and intermittent traction on the gubernaculum testis. The operation should be performed by election at puberty.

52. **Complete Amenorrhea.**—The patient was a Greek woman, about 40 years old, in good physical condition, of average size and development of body, with no evidence of defects of any kind, and with good average intelligence. She made some very minor complaints suggestive of that train of nervous troubles frequently accompanying the menopause. During the examination the fact was brought out that the woman never had menstruated in her life, that she had given birth to eleven children, five of whom were living at time of this examination; further, that the grandmother of the patient had never menstruated in her life, that the mother of the patient had menstruated only once in every one or two years. Of the patient's children, one, a girl of 14 years, had not yet menstruated. The patient herself was married at the age of 15 and gave birth to her last child four years ago. Patient further said she had never had symptoms of a menstrual molimen of any sort whatever, no knowledge of when her menstrual time might be due, no malaise, no pain, nothing, in fact, saying that she simply lived like a man and didn't know what it was to be sick.

55. **Hydrostatic Dilatation of the Cervix Uteri.**—Hirst has had made two new bags in three different sizes, one a flattened hour-glass, for the effaced cervix, the other a spool-shaped bag for the uneffaced cervix; the first, 2 inches; the second, 2½ inches deep, both having minimum transverse diameters of 1, 2 and 3 inches. These bags are attached to the blood-pressure apparatus so as to measure, decrease, increase or maintain at one level the pressure exerted by them.

Virginia Medical Semi-Monthly, Richmond

March 10

56 Advantages of Appendicostomy and Cecostomy in Ulcerations of the Intestines. S. T. Earle, Baltimore.
57 Principles of Infant Feeding. E. P. Copeland, Washington, D. C.
58 Immunity—Simplicity of the Theory. W. P. Carr, Washington, D. C.
59 Injuries to the Sacro-Iliac Joint. S. B. Moore, Alexandria.
60 The Duty of the Profession. M. J. Payne, Staunton.
61 The Use of Salvarsan. T. B. Leonard, Richmond.

Mississippi Medical Monthly, Vicksburg

March

62 The East Mississippi Four-County Medical Association. R. M Boyd, Aberdeen.
63 Infantile Diarrhea. S. D. Austin, Durant.
64 Auto-Intoxication. E. J. Hudspeth, Pheba.
65 Malarial Hemoglobinuria. M. L. Pollard, Thornton.
66 Neurasthenia. J. W. Primrose, Clarksdale.

New York State Journal of Medicine

March

67 *The Ideal Medical Education for the General Practitioner and the Specialist. A. Duane, New York.
68 Localized and General Peritonitis. Shall We Ask Nature to Do Her Own Surgery? W. D. Ward, Rochester.
69 The Colon. C. E. Coon, Syracuse.
70 Rabies and Its Methods of Control in New York State. J. F. DeVine, Goshen.
71 A Case of Hodgkin's Disease. J. A. Longmore, Brooklyn.
72 Chronic Gastro-Intestinal Disorders in Older Children. F. V. Bogert, Schenectady.
73 Neglected Points in Office Practice. G. E. P. Stevenson, Penn Yan.

74 Surgery of Neurasthenics. W. E. Ford, Utica.
75 Thoughts on Diagnosis. E. Munson, Medina.
76 Supervision of the Venereally Diseased. G. V. R. Merrill, Elmira.
77 *Varicose Ulcer and a Method of Treatment. F. W. Lester, Seneca Falls.

67. **The Ideal Medical Education.**—The propositions made by Duane are summarized in the following ideal sketch of what he hopes to see obtaining in the future:

1. The ideal medical course will be based on or rather will contain a large number of humanistic studies, comprising prominently Greek, Latin, English, history, economics, psychology and drawing.

2. These humanistic studies will be pursued side by side with the technical work and will be treated as of equal importance. This coordination of the two will be best effected by a combined liberal arts and technical course leading to the degrees of A.B. and M.D. This course will comprise sixty months of actual work which can well be compressed into six years.

3. For the ordinary medical student intending to become a general practitioner, some of the technical work now required (especially in the laboratory) will be eliminated—its place being taken by clinical work or by humanistic studies.

4. The medical course will begin and end earlier. This can be effected by making the work in the preparatory schools less diffuse and more thorough, and by lengthening the terms, both in the schools and in the university, from eight months to ten. In that case the student will begin his combined course at 16, get his A.B. at about 20 and his M.D. at 22.

5. Teaching, so far as possible, will be made individual. This will probably be best attained by the appointment of numerous preceptors. Each preceptor will have charge of four or five students, and it will be his business to see that they understand their work and that they do it properly. His relations with them will be intimate and informal.

6. The student will enter on elementary clinical work early in his course and even before he receives any didactic instruction on the theory and treatment of disease.

7. Clinical work will be graded. Step by step the student will learn to handle cases for himself. Under the guidance of his clinical preceptor cases will be put under his care, whose course he will follow day by day. As his experience increases he will be accorded more responsibility and a freer hand, until at the end of his course he will be competent to diagnosticate and treat any ordinary cases of disease. When he receives his degree he will not need a supplementary hospital course in order to qualify himself for practice.

8. The university will have its own hospital, which shall be completely under its control and which shall be officered by its own preceptors.

9. The university will provide all sorts of elective courses in all branches for undergraduate and postgraduate work. The selection of these by students will be strictly regulated, and only a very limited number can be taken by any one man before graduation. After graduation it will be possible for the student to get at his university the most detailed instruction and the fullest practical work in any medical subject.

10. The student will be systematically encouraged to do original work. Efficient aids to this end will be the plan of individual teaching and of individual clinical work here advocated, together with a wise application of the elective system.

11. The thesis will be restored as a requirement of graduation. In the combined course the student will present two theses—one on a non-technical subject for the degree of A.B., the other on a medical topic for the degree of M.D. In either case the thesis will count as the equivalent of an examination in a major subject.

12. The university will give ample postgraduate instruction in all departments of medicine: (a) For the benefit of graduates, especially those aiming to be country practitioners, who without desiring to be specialists, yet wish to be more or less conversant with several specialties; (b) for graduates who wish to pursue some special line of research or get special information in any field: (c) for those wishing to become specialists.

13. To the specialist the university will give an adequate, systematic and thorough training. It will require of him: (a) That he take certain specified electives either in the undergraduate course or in the postgraduate year; (b) that he spend at least two years after graduation in general medical and surgical work (preferably in a hospital); (c) that he afterward spend a full year in postgraduate work at the university in the theory and practice of his specialty; (d) that he present a thesis on some subject connected with his specialty: (e) that he pass a satisfactory examination in the theory and practice of his specialty.

14. On his fulfilling these requirements the university will confer on him the degree of Ph.D.

77. **Varicose Ulcer.**—The method to which Lester refers is as follows: Using adhesive plaster strips in lengths of from 12 to 18 inches, and from ¾ to 1 inch wide, envelop the leg in a net-work of the plaster strips, extending entirely around the leg, from the foot to just below the knee. These strips are applied tightly enough to ridge deeply into the edematous skin, and applied spirally, in both directions, so that when completed, the leg will present a checkered appearance and look as if small squares were attempting to burst through. The first strip encircles the foot itself, and extending in a spiral manner up the leg; the second, beginning on the opposite side of the foot and crossing the first strip, proceeding on up the leg, in a spiral opposite in direction to the first. so the strips are applied, about 1 inch apart, up the leg, crossing the ulcer as they happen to come, which, having been cleansed with pure olive oil or a solution of liquor cresolis compositus or phenol (carbolic acid), and dusted with calomel, is partially or entirely strapped under. Several thicknesses of sterile gauze may be then placed over the straps covering the ulcer, and a firm muslin bandage applied. The bandage should be removed and reapplied every morning, the gauze being renewed if soiled, but the straps left on for a longer period—from two to seven or eight days. The results of this treatment have been uniformly satisfactory to Lester, as a decided improvement may be noted almost from the first, and in a period of from two to four weeks, the ulcer is closed.

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Canadian Medical Association Journal, Toronto

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95 Food Standards. A. McGill.
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St. Paul Medical Journal

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97 Municipal Sanitation with Special Reference to Present Conditions in St. Paul. B. Foster, St. Paul.
98 Mechanism and Significance of the Reflexes. L. M. Craft Minneapolis.
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108 Drugless Healing. L. A. Merriam, Omaha, Neb.
109 Present-Day Problems in Acute Intestinal Obstruction. J. S Welch, Lincoln, Neb.
110 *A Case of Poisoning Following the Use of Coal-Tar Derivatives. A P. Overgaard, Fremont, Neb.
111 *Normal Saline Solution Given Through a Biliary Fistula M. J. Ford, Omaha, Neb.

110. **Poisoning Following Use of Coal-Tar Derivatives.**—For four years, Overgaard's patient had been a constant user of acetanilid, and would use as many as a dozen 5-grain tablets in twelve hours. She procured 1,000 at a time, and in the four years had used several thousand. She suffered from severe

headaches and vomiting attacks lasting for two or three days and as a rule she would have to be in bed. About two years ago, she began the use of morphin together with the acetanilid and is now using as much as 2 grains of morphin a day to get relief. When first seen by Overgaard, she had been in bed for six weeks, was emaciated, no appetite on account of persistent vomiting, headache always present, slightly jaundiced with marked tenderness and dulness over the gall-bladder region, very constipated and suffering from tympanitis. Dr. A. F. Jonas drained the gall-bladder of dark, thick, stringy bile. She made a good recovery from the effects of the operation, and in three weeks was up and around a little. She stopped the use of any drug and in a couple of months was doing her work and feeling fine. In about a year and a half Overgaard was again called to see her and found her in bed suffering from headache, vertigo, faintness, tinnitus, psychic irritability, dyspnea, palpitation and edema. There was also tenderness over the gall-bladder region and large quantities of bile and mucus were being vomited. She was using coal-tar products and morphin to relieve the pain. Her lips and finger nails were blue. She had lost about 20 pounds in weight during from four to six weeks. Overgaard says that the thing for the profession to do is to enlighten the public on the bad results arising from the use of these coal-tar products and to discourage the continued self-medication of the laity by the use of all kinds of headache tablets and powders.

111. **Normal Saline Solution Given Through a Biliary Fistula.**—Ford reports a case of cholecystitis in which 2 pints of normal saline solution were given daily for a week through a biliary fistula. A diagnosis of gall-bladder disease was made from the findings. Ford operated. The gall-bladder was distended to twice its usual size. One inch from the fundus was what appeared to be a sort of a diaphragm of very thick adhesions—the trocar would not go through without using considerable force. There were no gall-stones, but the gall-bladder was full of black, tarry, ropy bile. Ford curetted the gall-bladder—put in a rubber tube drain and ordered the patient put to bed in Fowler's position and given normal saline by rectum. There was practically no drainage, just a little bloody pus. The patient grew persistently weaker, and could not retain saline by bowels which were moving involuntarily. Four days after the operation, Ford started to give saline solution through the drainage tube in the gall-bladder. It took three hours for the pint of normal saline to run in. Some time later the patient had considerable distress in the stomach which was relieved by lavage with a solution of sodium bicarbonate. On the following day 2 pints of saline solution were administered through the tube into the gall-bladder, one in the morning and one in the afternoon. The patient continued to improve from the first time the saline was given by the biliary fistula. The improvement was continuous and as the patient gained in strength the bile began to flow through the fistulous opening and continued for about four weeks when the fistula closed of its own accord.

Kentucky Medical Journal, Bowling Green

March 1

112 Criminal Abortion. M. H. Sutherland, Harrodsburg.
113 Reduction of Infant Mortality, Especially in Rural Districts. E. L. Gowdy, Campbellsville.
114 Remittent Fever. E. L. Palmore, Hiseville.
115 Endocarditis. S. M. Hopkins, Demossville.
116 *Surgery of Musculospiral Paralysis. A. H. Barkley, Lexington.
117 Tuberculosis. R. N. Filiatrean, Knottsville.
118 Leukemia. M. A. Yelton, Falmouth.
119 Abortion. J. L. Wyatt, Buffalo.
120 Uncinariasis in the South and Its Neglect. W. F. Arnold, U. S. Navy.
121 Differential Diagnosis in Gastric Disease. J. H. Chrisman, Owenton.
122 Myocarditis. O. W. Brown, Lenoxburg.
123 Empyema Treated Without Rib Resection. A. M. Glass, Booneville.
124 A Case of Advanced Syphilis Treated with Salvarsan. J. A. Stuckey, Lexington.
125 Scorbutus. N. A. Jett, Brooksville.
126 A Peculiar Case of Dystocia. J. S. Tatum, Harreldsville.
127 Biographies of Members of the Central Kentucky Medical Society and Report of Its Last Meeting, Nov. 4, 1909. J. G. Carpenter, Stanford.
128 The Physician as an Educator and as a Sanitarian. G. J. Herman, Newport.
129 Typhoid and Its Proper Treatment. H. H. Stallard, Hellier.
130 Chronic Gastritis. T. O. Meredith, Burgin.

March 15

131 Pelvic Inflammation. L. Bloch, Louisville.
132 Atypical Pneumonia. W. F. Boggess, Louisville.
133 Chronic Prostatitis. H. Bronner, Louisville.
134 Rectal Cancer with Colostomy. G. S. Hanes, Louisville.
135 Fatty Tumor of the Gum. B. F. Zimmerman, Louisville.

116. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1221.

Ohio State Medical Journal, Columbus

March

136 Indications for Nephrectomy. E. O. Smith, Cincinnati.
137 *Pulmonary Manifestations of Syphilis. R. P. Daniels and H. W. Dachtler, Toledo.
138 Treatment of Mucous Colitis. W. Teachnor, Columbus.
139 *Phases of the Surgical Treatment of Gastric Ulcer. W. D. Haines, Cincinnati.
140 The Borderland of Sprain, Fracture and Periosteal Inflammation After Trauma. W. G. Stern, Cleveland.
141 What Should Be the Attitude of the Profession Toward the Non-Medical Cults? C. W. Moots, Toledo.

137. Abstracted in THE JOURNAL, July 16, 1910, p. 246.

139. Abstracted in THE JOURNAL, May 28, 1910, p. 1809.

Military Surgeon, Washington, D. C.

March

142 Blank Forms for Internal Administration of Army General Hospitals. T. L. Rhoads, U. S. Army.
143 Camp Wikoff, Montauk Point, New York, in 1898. L. C. Brown, U. S. Army.
144 Prevention of Typhoid. F. R. Keefer, U. S. Army.
145 *Ethics, Scope and Prerogative of the Army Medical Officer. L. M. Maus, U. S. Army.
146 Report on an African Trip. W. W. Roberts, U. S. Army.
147 A Case of Rabies at Camp Overton, Mindanao, P. I. O. Weston, U. S. Army.

145. Abstracted in THE JOURNAL, Dec. 17, 1910, p. 2173.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

March 4

1 Dilated Stomach. A. F. Hertz.
2 Prevalent Rain-Bearing Winds and the Milk Supply of Manchester During the Years 1896-1909. W. Gordon.
3 Diagnosis of the Commoner Causes of Chronic Jaundice. P. J. Cammidge.
4 The Urines of Marathon Runners. G. Chambers.
5 Intussusception of the Appendix. J. W. Thomson.
6 *Chronic Traumatic Mastitis. G. L. Cheatle.
7 *An Unusual Form of Perineal Hernia. A. G. Atkinson.

March 11

8 Common Injuries of the Knee-Joint and Their Consequences. W. A. Lane.
9 Injuries of the Lower End of the Humerus. C. H. Fagge.
10 Rheumatoid Arthritis. J. C. Briscoe.
11 Two Cases of Pernicious Anemia Treated by Salvarsan. B. Bramwell.
12 Operations for Calculus in the Male Bladder. W. F. Haslam.

3. **Chronic Jaundice.**—By a timely and correct diagnosis, such as is possible from a careful consideration of the clinical history and symptoms, and the information to be obtained by thorough analysis of the urine and feces, Cammidge says the complications and sequelæ likely to arise in cases of chronic jaundice—serious disease of the pancreas, cholangitis, cirrhosis of the liver, etc. may be avoided. Delay is always dangerous, and it is useless to await developments until the case is of interest only to a pathologist. The cause of the jaundice must be determined at the earliest possible moment and the treatment be based on the conclusion arrived at. A diagnosis of gall-stones obstructing the bile duct, made on the clinical data and confirmed by an examination of the excreta, calls for immediate operation, as the only likely spontaneous cure is Nature's crude and dangerous remedy of making a fistula by which the stone may escape into the duodenum, or elsewhere. Catarrhal jaundice frequently clears up spontaneously, but if after six weeks of rest in bed, with dieting and medical treatment, the jaundice persists and the urinary "pancreatic" reaction is positive, it is advisable to invoke the aid of the surgeon to perform a short-circuiting operation to avoid further damage to the pancreas. In the last stages of malignant disease operation is only likely to shorten the brief span of life still left to the patient, but in the earlier stages much may be done to make existence more bearable by a cholecystotomy or cholecystenterostomy to relieve the intolerable itching of which complaint is chiefly made. At the same

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54. **Rice Bran in Prevention and Treatment of Beriberi.**—Breaudat and Denier report from the Pasteur institute at Saigon in Indo-China that rice bran seems to remove the cause of beriberi and prevent its development. They gave the bran in the form of pills mixed with syrup and peppermint, about 40 gm. of the bran being thus added daily to the ordinary food. It never caused any digestive disturbance while it had a marked curative action, equal to that of any drug. There were 210 native soldiers who took the pills in prophylaxis including thirty-seven who had had beriberi, and there were forty-nine who had had it in 311 controls. Between September 15 and February 1 no cases of beriberi developed among those taking the bran, while 17.4 per cent. of the controls had it. The action of the bran was less pronounced in those who had already had the disease.

Annales de Médecine et Chirurgie Infantiles, Paris

March 1, XV, No. 5, pp. 145-176

56 *Unrecognized Diphtheria. (Les diphtéries méconnues de l'enfance.) E. Terrien.
57 Poliomyelitis with Meningeal Symptoms. L. Benard and Maury.
58 Streptococcus Origin of Scarlet Fever. M. Thomas.
59 Insufficiently Fed Infants. (Troubles causés par l'hypoalimentation des nourrissons.) G. Variot.

56. **Unrecognized Diphtheria.**—Terrien thinks that in many cases of so-called malignant diphtheria the infection had been installed for some time in a more inaccessible region and had thus escaped discovery; only when it reached the throat was it recognized, and then it was in such full swing that no means were able to arrest it. Glatard, in 1902, was able to collect 333 cases of primary nasal diphtheria, in most of which the infection had escaped recognition. Faseuille has recently called attention to its frequency in infants, and warns that any rather severe and persisting coryza in an infant should suggest diphtheria, even when no false membranes can be discovered. Kuhn, Gallo and Abrand have each encountered a case in which the diphtheria persisted almost latent in a babe; one had only slight fever and sore throat but it finally sneezed a tube of membrane out of its nose. Schaps found a serous, blood-stained discharge from the nose and excoriation of the upper lip as the only manifestation of diphtheria in nine infants. In four cases reported by Dupont the membrane formation was restricted to the nasal fossæ and did not invade the throat. Adenoid vegetations may also be the primary and the sole seat of the diphtheria process; Rocaz has encountered ten such cases. This primary and localized diphtheritic adenoiditis seems to be unusually virulent; the extent of absorbing surface is exceptionally large and the general symptoms are severe, in contrast to the mild general symptoms with the primary nasal form. The unusual gravity, the rapid course, the difficulty of recognizing the affection, all conspire to enhance the danger of diphtheritic adenoiditis. It should be suspected when the child shows signs of adenoiditis, earache and hoarseness, the nose being stopped up but without the discharge of coryza. Then follow the general symptoms, such as extreme lassitude and pallor, swelling and tenderness of the glands in the neck and the rapid pulse even when there is no rise in temperature. The laryngoscope or bronchoscope was the only means of detecting the process in some of the cases cited. For bacteriologic examination the material must be taken from behind the velum, through the nose, inoculating several tubes.

Bulletin de l'Académie de Médecine, Paris

February 21, LXXV, No. 8, pp. 217-318

60 *Classification of Female Pseudohermaphrodites. Magnan and S. Pozzi.
61 *The Plague in Astrachan and in Manchuria. A. Chantemesse and Borel.
62 Malformations of the Breast and Tumors. (Malfaçons embryonnaires de la glande mammaire. "Dysembryoplasies" et "dysembryoplasmomes" du sein.) M. Letulle.

February 28, No. 9, pp. 319-334

63 *Preventive Vaccination Against Typhoid. H. Vincent.
64 Prophylaxis of Small-Pox in French Colonies in Africa and Indo-China. Kermorgant.

60. **Female Pseudohermaphrodites.**—In the case reported, the patient had been brought up as a man and was apparently happily married, when an ovarian sarcoma had to be removed. In discussing the case, Magnan and Pozzi suggest a classification for pseudohermaphrodites based on the feminine or masculine aspect. They suggest the term gynoid for the former and android for the latter, prefixing "andro" or "gyn" to designate the histologic sex. The irregular hypospadic andro-gynoid type is the most frequent, and is readily confirmed by discovery of the testicles. The gyn-android type is rare; the case reported is of this type with inversion of the genital sense.

61. **The Plague.**—Chantemesse compares the conditions in Manchuria now with those in an epidemic of plague thirty-two years ago in southern Russia. In the latter epidemic some villages along the Volga were affected with a strange disease, and after the death of the physicians and local authorities the terror-stricken peasants took matters into their own hands, shutting off the infected houses and permitting no one to enter or leave them or to enter the villages from without. These rude, illiterate peasants, in 1878, took instinctively the proper measures in regard to isolation, and the epidemic soon died out from lack of fuel. The dead were hauled with long-handled hooks to the pits dug for them, and any one suspected of having been in contact with the sick was not allowed out of the house for twenty days. By the time the national authorities took a hand in quarantining the villages the epidemic had died out after having caused 500 deaths. Far different are the conditions in Manchuria to-day. The people hid their sick when the plague first appeared among them, and thus the epidemic got a firm foothold in many places before its existence became known to the authorities. Trappers in the region east of Lake Baikal had collected a number of skins of the land otter, or tarabagan, common along the rivers of Siberia. Schottelius of Stuttgart, Germany, called attention some time ago to the peculiar susceptibility of this animal to the plague. [*Public Health Reports*, March 10, states that it is a marmot, related to the American woodchuck and the prairie dog, and that 10,000 trappers were in the field last year to get the skins.] Chantemesse says that the existence of the plague among these animals was known and also the fact that it assumed the pneumonic form in them. The hunters in question had collected a number of pelts; in October these hunters developed plague and it spread among the Chinese inhabitants of the region. The latter fled eastward in their fright, seeking refuge in Manchuria but concealing the fact of the infection until the epidemic had assumed extensive proportions. The infection is extremely virulent; Haffkine has been in Manchuria since December and he states that he has not known of a single recovery. None of the 130 persons he has vaccinated there against plague has contracted the disease although constantly exposed—omitting those vaccinated after the infection was already installed.

One of the principal questions still to be decided is the length of the incubation period. Winter is the plague season. Another remarkable feature of the plague, Chantemesse adds, is that when the disease is once installed in a place it seems almost impossible to eradicate it. In Egypt, for instance, notwithstanding the strictest measures, the disease maintains its foothold, and the number of cases has increased constantly from 99 in 1899 to 640 in 1906, and since then from 500 to 1,500 cases yearly, with 118 cases already in 1911, but the type of plague is mild there. In regard to the destruction of rats on shipboard, Chantemesse remarks that the results are exactly proportional to the zeal and conscience of those doing the work and proportional to the strictness of the supervision over them by the authorities in charge.

63. **Preventive Vaccination Against Typhoid.**—The Académie formally adopted a resolution advocating preventive antityphoid vaccination under certain conditions. The text of the resolution was given in the Paris Letter in THE JOURNAL, February 25, page 601.

Lyon Chirurgical, Lyons

March, V, No. 3, pp. 209-300

65 *Treatment of Megacolon in Adults. G. Gayet and M. Patel.
66 *Autoplastic Method of Treating Hypospadias. Cantas.

65. **Hirschsprung's Disease in Adults.**—Gayet and Patel warn that medical measures should not be continued too long if the patient is not improving, otherwise he will be in bad condition for an operation if this becomes necessary. The medical measures should be those for obstinate constipation in general except that drastic purgatives should be avoided. The only drug that seems to have done any good is morphin; this acts by abolishing spasmodic contraction. Seven different operations may be applied and the authors review series of cases of each type, totaling forty-one, some of them not previously reported. Sometimes an exploratory laparotomy reveals torsion and other mechanical conditions which it is easy to remedy without the knife or merely with a colopexy. This partial operation is liable to fail, however; probably many failures in this category have not been published. The best plan is to make an artificial anus at once. This can be done easily and rapidly, they say, if the appendix is utilized to make the new anus; this proved successful in two very serious cases in their experience. When the disturbances from obstruction have subsided, the way is cleared for radical operation on the enlarged colon. When the patient is robust and the colon is very much enlarged, they advise inserting the ileum in the terminal portion of the sigmoid flexure, excluding the abnormal part of the bowel altogether. Sometimes an abdominal tumor is the only finding. When the supposed tumor proved to be feces impacted in the enlarged colon, they have found it possible in some cases to manipulate the fecal masses toward the natural anus after the abdomen has been opened. If the masses are stony hard, this measure is not advisable as the intestine is liable to become injured thereby. Enterotomy should be reserved exclusively for cases of this kind unless enterectomy at once is deemed preferable.

66. **Autoplastic Treatment of Hypospadias.**—Cantas cuts a skin flap in the thigh, including in it a stretch of the internal saphenous vein. This flap is twisted around and the vein utilized to make the urethra. He reports a case in which this technic was successfully applied.

Presse Médicale, Paris

March 1, XIX, No. 17, pp. 153-160

67 Mechanism of Spasmodic Contracture. M. Noica.
68 Headache with Abnormally Low Blood-Pressure. (Cephalalgie des hypotendus) A. Martinet.

Semaine Médicale, Paris

March 8, XXXI, No. 10, pp. 109-120

69 *Hexamethylenamin in Treatment of Acute Biliary Infections and of Typhoid Fever. (L'urotropine dans le traitement des infections biliares aigues et de la fièvre typhoide.) A. Chauffard.
70 *Should Women in Eclampsia Nurse Their Infants? R. de Bovis.

69. **Acute Biliary Infections in Typhoid Fever.**—Chauffard is convinced that if careful search were made for signs of acute infection of the gall-bladder and bile ducts in typhoid fever, infectious processes in this region due to the typhoid bacilli would oftener be discovered. He has encountered a number of such cases, as he relates in detail, and discusses whether it might not be possible to give some drug which is eliminated in the bile and might thus act directly on the angiocholecystitis. The latter condition is a frequent source of typhoid relapses and may leave the patient a chronic carrier. Recent research has shown, he says, that hexamethylenamin is eliminated in the bile and thus it can sterilize the biliary passages while it cures the bacilluria at the same time. He has been much impressed with the promptly favorable modification in typhoid fever which followed exhibition of 0.5 gm (7.5 grains) of the hexamethylenamin three times a day. One patient was a youth of 15 with chills and high fever, tenderness and discomfort in the right hypochondrium, all developing the twenty-second day of a mild typhoid. The temperature chart shows the prompt benefit which followed this medication.

70. **Should Women with Eclampsia Nurse Their Infants.**—De Bovis concludes from some recent reports that it is best to draw and throw away the milk of women with eclampsia developing after delivery as it is liable to prove toxic for the infant for a few days. After the toxins have been more or less perfectly eliminated the child can be put to the breast. It is probable, he thinks, that every parturient is in a condition of auto-intoxication to a certain extent, and it is possible that the milk attracts the toxins of eclampsia as it seems to attract arsenic. When the eclampsia develops before delivery, the toxins are more liable to be eliminated by the time the infant is ready to nurse than when the eclampsia does not come on until after the child is born.

Archiv für klinische Chirurgie, Berlin

XCIV, No. 3, pp. 581-709. Last indexed February 18, p. 545

71 Experimental Research on Pathogenesis of Round Gastric Ulcer. F. Rosenbach and Eschker.
72 Experimental Research on Tetany. N. Guleke.
73 Rectal Tumor from Non-Malignant Transformation of Epithelium. (Benigne Epithelheterotopie als Ursache eines Mastdarmtumors.) A. Cahn.
74 Technic for Extensive Resection of the Stomach. J. Schoemaker.
75 Appendicitis. (Zur Behandlung der acuten eitrigen Appendicitis mit circumscripter oder diffuser Peritonitis.) F. Sasse.
76 Mechanism of Dislocation of Joints with Single Axis. (Zur Mechanik der Luxation der einachsigen Gelenke.) H. Zuppinger.
77 Tincture of Iodin Superior to Alcohol for Sterilization. (Vergleichende Desinfectionsversuche mit Jodtinctur und Alkohol.) F. Drüning.
78 End-Results of Transplantation of Pedunculated Suprarenals. (Gestielte Nebennierentransplantation und ihre Endresultate.) H. v. Haberer.
79 Trigger Finger. (Der schnellende Finger.) K. Poulsen.
80 Prolapse of Fat Tissue Surrounding Kidney. (Prolaps des Fettlagers der Niere, eine Hernia lumbalis vortäuschend.) Duncker.
81 *Spontaneous Retrogression of Superficial Epithelioma. J. Bolognesi.

81. **Spontaneous Retrogression of Cutaneous Epitheliomas.**—Bolognesi gives illustrations of a case of multiple epitheliomas on the lips, cheeks and eyebrow of a woman of 72 which developed in the course of a year and a half and then gradually subsided, leaving for most of them merely a pinkish scar. Scraps excised at various times from the retrogressing tumors and excision of one in the brow showed the structure of Krompecher's baso-cellular epithelioma, Darier's epithelioma of the second class, nothing of the cancroid type.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIX, No. 1, pp. 1-335. Last indexed March 18, p. 855

82 *Induced Pneumothorax in Pulmonary Tuberculosis. III. L. Brauer and L. Spengler.

82. **Induced Pneumothorax in Tuberculosis.**—This volume of 336 pages contains the detailed account of eighty-three cases, bringing the total to 102 in which Brauer and Spengler have compressed the lung by an artificially induced pneumothorax in treatment of unilateral pulmonary tuberculosis. The work was done at the medical clinic at Marburg or the Davos sanatorium, and this forms the third memoir on the subject. The volume is dedicated to Professor Erb on his seventieth birthday. The material is arranged and numbered so that a complete oversight of the cases is possible in these and in future later reports. Complete recovery was obtained in a number of cases in which, they are convinced, it would have been impossible to realize similar benefit by other measures. They are becoming more and more certain that with careful selection, in the moderately severe cases this collapse therapy, as they call it, when conditions permit will give excellent results. As pioneers in this field, however, they feel bound to extreme caution and reserve and consequently they think the measure must stand its highest test in the severer cases so that its dangers and shadows may be fully appreciated. Then it can be applied in the milder cases with courage and confidence. A number of Roentgen-ray pictures and curves are appended.

Beiträge zur klinischen Chirurgie, Tübingen

February, LXXII, No. 1, pp. 1-264

83 Biology of Malignant New Growths. (Zur Biologie der bösartig E. E. Goldmann.
84 *Hemostas Electric Current. (Blutstillung durch M. Hoffmann.
85 *Joint Les and Measles. (Gelenkerkrankungen bei Scharlach und Masern.) K. Fritsch.
86 Determination of the Viscosity of the Blood in Surgical Abdominal Disease. L. Simon.
87 Tuberculosis of the Penis. C. Rose.
88 Experimental Inoculation with Echinococcus Disease. (Experimentelle Erzeugung des Echinococcus durch Keimpfropfung.) G. Hosemann.

or other disturbance in the intima of the vessel and some disturbance in the circulation of the blood are indispensable factors in the development of thrombosis. It has been encountered not only in the course of heart and vascular disease, marasmus, cancer, phthisis, syphilis and acute infectious disease, but also in acute and chronic suppurations, especially appendicitis and otitis, pyemia and poisonings. The localization and course of the thrombosis are peculiar in anemia, leukemia and chlorosis, as he shows by a number of examples from the records. By far the largest proportion of cases of thrombosis, however, develop in connection with operations and deliveries, but a few cases are on record of thrombosis following trauma, sometimes quite slight, and he reports an instructive case of this kind in a robust young man who had been riding an unruly horse. The strain on his arms was the probable cause of the thrombosis which suddenly developed in the left subclavian, axillary and brachial veins. Schepelmann assumes that the traction on the veins in the arm must have injured the intima; a predisposing factor existed in bradycardia from a slight cardiac defect; in youth the patient had had diphtheria, articular rheumatism and a furuncle in the ear.

Münchener medizinische Wochenschrift

February 28, LVIII, No. 9, pp. 441-496

126 Red Corpuscles as Complete Cells. (Der Säugetiererythrozyt als vollständige Zelle und seine Beziehung zum Blutplättchen.) V. Schilling.
127 Nervous Respiratory and Cardiac Disturbances as Consequence of Gastro-Intestinal Irritation. M. Saenger.
128 *Salvarsan in Non-Syphilitic Ulceration of the Mouth and Throat. P. H. Gerber.
129 Salvarsan in Syphilis. A. Sack.
130 *Induced Pneumothorax in Severe Unilateral Pulmonary Tuberculosis. L. Spengler.
131 Protection of Eyes in Glass-Works. (Augenschutz in Glashütten.) F. Koelsch.
132 Biology of [illegible] (Zur Lehre von der Entstehung der Menstru[illegible]
133 *Gonorrheal [illegible] Leede.
134 Urine Reac[illegible] Nervous System. (Spezifische Bedeutung der Harnreaktion mit Liquor Bellostii bei Paralyse.) F. Stern.
135 Harelip with Cleft Palate. (Behandlung der mit Wolfsrachen komplizierten einseitigen Hasenscharten.) R. Drenkhahn.

128. Salvarsan in Non-Syphilitic Mouth Lesions.—Gerber presents clinical evidence to show that not only Vincent's angina but numerous other inflammatory affections of the mouth and throat are the work of spirochetes. Not only gingivitis but simple and mercurial stomatitis, scorbutus and possibly noma are the result of invasion by the spirochetes when a path is opened for them by minute lesions. Drugs that act on spirochetes have a curative influence, as he shows by three cases reported in which salvarsan proved effectual.

130. Permanent Cure of Tuberculosis with Induced Pneumothorax.—Spengler has now fifteen patients who can be regarded as clinically cured by the artificially induced pneumothorax. From nine months to four years have elapsed since the close of the treatment and the patients have neither fever, cough nor sputum while all are in prime working condition. The ages ranged from 11, 16, 17 and 18 to 31, 34, 35 and 43. The pneumothorax was maintained for from two months to five months in two cases, in three from ten to fifteen, and in four from eighteen to twenty-four months. Compare with Abstract 82, above.

133. Gonorrheal General Infection.—Leede reports a case which resembles one of Jadassohn's in which the urethra seemed to be intact and the general infection occurred through an erosion in the skin. Leede's case is one of the rare instances of fatal gonorrheal arthritis. A purulent hemorrhagic lesion in the ankle was the main source of the intoxication; Leede ascribes the severe general symptoms to a peculiar idiosyncrasy to the toxins generated by the gonococci. This was evidently responsible for the stupor, the cachexia, the extreme atrophy of the muscles, the desquamation and the fatty degeneration of the heart; the blood was constantly sterile. In another case the syndrome began about the same, the left elbow being the seat of the lesion. In this case he punctured the joint but without finding pus or effusion and then he opened the joint wide, allowing the escape of considerable edema fluid. This released the toxins in the focus and the patient soon recovered. No gonococci could be cultivated from the fluid in this last case. Leede's experience thus teaches the wisdom of ample opening up of the joint when gonorrheal arthritis is accompanied by great debility, emaciation, etc.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 26, XXXII, No. 25, pp. 259-274

136 Paroxysmal Course of Certain Nervous Diseases. (Sul decorso accessuale di alcune malattie nervose.) F. Rivalta.
137 Treatment of Anthrax. (Terapia dell'infezione carbonchiosa nell'uomo.) R. G. Zoda.

Riforma Medica, Naples

February 27, XXVII, No. 9, pp. 225-252

138 Intrapontine Tumor. A. Rovighi.
139 Rapid Bacteriologic Differentiation of Cholera. G. Pollaci.
140 Comparative Tests with Antiformin for Tubercle Bacilli in Sputum. (Il metodo dell'antiformina per la ricerca del bacillo tubercolare nello sputo.) G. Mangeri.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

1910 Blue Book of Surgery. Technic of [illegible]urgical Clinic, *Anesthesia and Anesthetics. Preoperative* and Pe[illegible]rative Care of the Patient, and Diagnosis and Treatment of [illegible] of the Most Important and Frequent Surgical Diseases. [illegible]piled for the Interns, Students and Nurses of the College of [illegible]dicine and Surgery, University of the *Philippines*, and the [illegible]lippine General Hospital. Under the Direction of John R. McDill, M.D., Professor of Surgery, College of Medicine and Surgery, Univ. of the Philippines. By Hans E. Schiffbauer, M.D., Instructor in Surgery, College of Medicine and Surgery, Univ. of the Philippines. (Published in *part in the Bulletin of the Manila* Medical Society.) Cloth. Pp. 66.

The Treatment of Syphilis with Salvarsan. By Dr. Wilhelm Wechselmann, of Berlin, Medical Director of the Skin and Venereal Disease Section, Rudolph Virchow Hospital, Berlin. With an Introduction by Dr. Paul Ehrlich, of Frankfort-on-Main, Director of the Royal Institute for Experimental Therapeutics, Frankfort. Only Authorized Translation by Abr. L. Wolbarst, M.D., of New York, Consulting Genito-Urinary Surgeon, Central Islip State Hospital. Cloth. Price, $5. Pp. 175, with illustrations. New York: Rebman Co., (1911).

A Handbook of Obstetric Nursing. For Nurses, Students and Mothers. Comprising the Course of Instruction in Obstetric Nursing Given to the Pupils of the Training School for Nurses Connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D., Formerly Obstetrician, Gynecologist and Surgeon to the Woman's Hospital of Philadelphia. Seventh Edition. Cloth. Price, $1 net. Pp. 272, with 61 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

A Handbook of Practical Treatment. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. In Three Volumes. Vol. II. Cloth. Price, $6 net. Pp. 865, with 103 illustrations. Philadelphia: W. B. Saunders Co., 1911.

Feeble-Mindedness in Children of School Age. By C. Paget Lapage, M.D., M.R.C.P., Lecturer in School Hygiene to the Manchester University. With an Appendix on Treatment and Training, by Mary Dendy, M.A. Cloth. Price, $1.60 net. Pp. 359, with illustrations. New York: Longmans, Green & Co., (1911).

Dyke's Automobile Encyclopedia (1911). In 29 Parts, *Including a Dictionary.* Treating on Construction, Operation, Repairing of Automobiles and Gasoline Engines. By A. L. Dyke, E. E., Member Society *Auto Engineers. Cloth. Pp.* 407, with illustrations. St. Louis: A. L. Dyke.

Technik der mikroskopischen Untersuchung des Nervensystems. Von W. Spielmeyer, Privatdozent und Assistent an der psychiatrischen und Nervenklinik in Freiburg i. Br. Cloth. Price, 4.40 marks. Pp. 131. Berlin: Julius Springer, 1911.

Cholera and Its Treatment. By Leonard Rogers, M.D., F.R.C.P., F.R.C.S., Physician, Cholera Wards, Medical College Hospital, Calcutta. Oxford Medical Publications. Cloth. Price, $4 Pp. 236. New York: Oxford University Press, 1911.

Die Akute Poliomyelitis bzw. Heine-Medinsche Krankheit. Von Dr. Ivar Wickman, Privatdozent am Karolinischen Institut zu Stockholm. Paper. Price, 5 *marks.* Pp. 108, with illustrations. Berlin: Julius Springer, 1911.

State Board Questions and Answers. By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Second Edition. Cloth. Price, $4 net. Pp. 715. Philadelphia: W. B. *Saunders Co.*, 1911.

Vicious Circles in Disease. By Jamieson B. Hurry, M.A., M.D. (Cantab.). Cloth. Price, $2 net. Pp. 186, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

Eighteenth Annual Report of the Board of Health of the *Town of Westfield* [Mass.]. For the Year Ending Jan. 20, 1911. Paper. Pp. 23.

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CHRONIC PANCREATITIS: ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT

BASED ON A STUDY OF THIRTY-EIGHT CASES *

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PHILADELPHIA

In the domain of pancreatic disease there still remains much unbroken ground. Uncertainties in pathology, obscurities in symptomatology and difficulties in diagnosis beset us and render our clinical judgments difficult and our therapeutics far from satisfactory. Only by the accumulation of accurate observations can the subject be cleared up, and it is desirable that each should add his personal experience. With this in mind I have reviewed those cases of chronic pancreatitis which have come under my personal observation during the past few years and of which my records are sufficiently complete to warrant their inclusion. For the laborious task of collecting and analyzing the cases I am indebted to two of my house doctors, L. C. Kinney and LeFevre Stewart, and to my assistant, Dr. D. B. Pfeiffer.

Of the various affections of the pancreas, those composing the group due to inflammation and its sequels are the most frequent and important. By reason of its protected situation, direct injuries to the pancreas are uncommon. Likewise, while it is subject to the various neoplasms affecting parenchymatous organs, there is no such tendency toward tumor formation as occurs in certain other parts of the body. The observations of recent years, however, made chiefly at the operating-table, have made it apparent that inflammatory changes are much more frequent than anyone had hitherto surmised. It was but natural that the most extreme grades of inflammation were the first to claim attention, and since the pioneer work of Fitz, the acute and subacute forms of pancreatitis have been clothed with a fairly definite pathology and symptomatology, though it is but just to say that our knowledge even here lacks completeness; and in the individual case the difficulties are many.

It is, however, when we approach the consideration of the lesser degrees of inflammatory change of chronic nature with their less characteristic clinical declarations, that we feel our ground often slipping and insecure. Fitz wrote understandingly of chronic pancreatitis and the chief additions to our knowledge since then have been made by Körte, Oser, Lancereaux, Opie, Moynihan, Robson, Cammidge, Truhart and Lazarus. Still most clinicians are agreed that the diagnosis of chronic pancreatitis is exceedingly difficult. The extremes of opinion in this respect are those of Opie, who holds that "the lesion is seldom associated with such definite symptoms that it is recognizable during life," and of Robson and Cammidge, who state that, "from the information obtained by a careful examination of the patient, a knowledge of the history of the case, and the results of a chemical and microscopic examination of the excreta, a correct opinion may be formed in a large majority of instances." My own feeling in regard to this matter is located somewhere between these pessimistic and optimistic expressions. Certainly the diagnosis has been made a sufficient number of times to demonstrate that it is not too difficult to attempt; but it is equally true that our present criteria are too uncertain and inconstant to warrant a claim for great accuracy. We must aim to improve our methods and our understanding. There are no pathognomonic symptoms, no short cuts to the diagnosis of chronic pancreatitis. It is to be made only by the solution of an equation, the factors of which are obtained by three separate lines of inquiry, viz:

1. The anamnesis.
2. The physical examination.
3. The special tests designed to show disturbances of pancreatic function.

I have divided my cases into two groups, according to the presence or absence of gall-stones. Of the seventy-three cases, in thirty-five there were stones in some portion of the biliary passages, and in thirty-eight there were none at the time of operation.

In these remarks I shall restrict myself to the non-calculous group, believing that these cases will give a truer picture of pancreatic disease *per se*. The cases with stones will be considered at another time. The series is still not entirely pure, since twelve had demonstrable changes in the gall-bladder at the time of the operation. Hence a certain admixture of biliary symptoms may be present in this analysis.

A careful history is of the first importance. Habits of eating or drinking which set up chronic inflammatory changes in the stomach and duodenum will be found in certain cases; in others a history of the infectious conditions which are especially likely to be followed by disease of the biliary passages. Often a history of antecedent, disregarded and perhaps forgotten indigestion is obtained. If disease of the bile-ducts and gall-bladder have preceded the pancreatic inflammation, the early history will partake of the inaugural symptoms of that disorder, and perhaps frank attacks of hepatic colic have occurred.

The relation of sex to chronic pancreatitis as compared with cholelithiasis is reversed. There were twenty-two males and sixteen females. This corresponds with Opie's figures, who found seventeen males and thirteen females. Bohm's large statistics also show that 65 per cent. occurred in the male sex. In view of the preponderance of biliary infections in the female sex, this fact is significant as showing that there must be some essential difference in the factors which produce infection in the ducts of these closely situated viscera. According to Desjardins, the same infection arising in the intestine and traveling up the bile and pancreatic ducts will, in the former situation, induce a stone-forming catarrh, but in the pancreas will cause a chronic interstitial inflammation. The lack of parallelism in the two kinds of infection, while not conclusive, creates a presumption against such complete similarity of origin in the majority of instances.

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* Read before the College of Physicians of Philadelphia, March 1, 1911.

The incidence according to age is as follows:

Below 30	4
30 to 40	11
40 to 50	11
50 to 60	8

More than two-thirds of Opie's cases occurred between the ages of 40 and 60. In my series it is seen that the age is lower, two-thirds occurring between the ages of 30 and 50. This is accounted for by the fact that all but one of my cases were operative while Opie's statistics include post-mortem records.

The onset of symptoms is spoken of as sudden in twenty-five cases, gradual in thirteen; but these figures refer especially to exacerbations, premonitory symptoms being present in the majority of instances.

The leading and most constant symptom is pain, which was absent in only three cases. I am conscious of the fact that I am dealing with a series of cases that have been driven to surgical intervention. This magnifies the importance of pain as a symptom, for too frequently it requires suffering to bring a patient to the operating-table. The practitioner must see many cases of pancreatitis in which pain is absent or inconspicuous.

The pain of chronic pancreatitis, or its mild exacerbations, is not in itself characteristic. It varies from dull discomfort or ache to sharp lancinating or colicky pain quite like gall-stone colic. It may be merely a sense of fulness or oppression in the epigastrium. The pain was severe in twelve cases; moderate in twenty-one; in eleven it was colicky.

In the majority of cases when the pain was colicky in type the gall-bladder was diseased. In one instance several small stones had been passed *per vias naturales* a short time before, though none was found at the time of operation. It seems probable that by the dilatation of the ducts following passage of a stone, the gall-bladder had been enabled to empty itself of its calculous contents. From these observations I am inclined to interpret colicky pain, when present, as evidence of involvement of the bile passages. In seventeen cases the pain was located in the epigastrium; in fifteen beneath the right costal margin: in one beneath the left costal margin; in two it was lumbar, and in one severe exacerbation it was general. From the primary location radiation took place to the epigastrium in five; to the back in nine; to the right and left costal margin in eight and one cases, respectively, and to the right and left shoulders in nine and two cases, respectively.

No definite relation to eating or to any particular articles of food was brought out in this series. This seems to be of some value in differentiating pancreatic pain from that of ulcer of the stomach or duodenum and, to a less extent, from gall-bladder disease.

It has been observed that in some cases the carbohydrates are most likely to set up digestive disturbances and Sailer found that the administration of glucose for the purpose of testing the assimilation limit was particularly distressing to these patients.

But slightly less frequent than pain is the history of nausea or vomiting or both. Twenty-one of my patients had had attacks in which vomiting figured, while ten more had been nauseated without actually vomiting. Opie has called attention to the association of chronic interlobular pancreatitis and persistent vomiting, and cites four of his thirty cases, in which advanced chronic interstitial inflammation was found in individuals who during life had suffered with persistent vomiting. While I have not encountered vomiting lasting persistently over a considerable period of time, yet the prominence of nausea and vomiting occurring in attacks at variable intervals indicates its importance as a symptom of the more severe type of the disease.

In ten cases it occurred before the onset of actual pain. This may have been due to what Mayo has spoken of as "the association of surgical diseases in the upper abdomen," for we must always remember that pancreatitis is a disease which in the majority of instances is preceded by, or associated with, disease of the neighboring organs such as gastritis, duodenitis, or biliary catarrh. The vomiting of pancreatitis is non-characteristic, though often containing mucus and bile. Eructations of gas are common in this disease as in most other abdominal affections, and were specially mentioned as a distressing symptom in twelve cases.

The third important symptom is jaundice. This also, as a striking and intensely disagreeable thing for the patient, like pain, is apt to be magnified in importance in any operative series. It was present at the time of operation, or previously in twenty-four cases, absent in fourteen. Eleven patients were jaundiced when admitted. The mechanism of the production of jaundice is easily understood when it is considered that the common duct, in approximately two-thirds of all cases, courses through the head of the pancreas before reaching the duodenum. As this is the portion of pancreas which is most commonly affected by inflammation, it is to be expected that biliary drainage in a percentage of cases will be interrupted by tumefaction of the tissues embracing the duct. It is certain that many cases of so-called catarrhal jaundice are to be explained in this manner.

Owing to this inconstant relation of the choledochus to the pancreas, it is apparent also that a high degree of inflammation or sclerosis of the pancreas may be consistent with the absence of jaundice. All the cases of jaundice with pancreatitis are not to be explained on mechanical grounds, but a certain percentage are doubtless due to disease of the bile passages themselves or to extension of inflammation from a catarrhal duodenum. The jaundice may come on painlessly, as occurred in four cases. It may also be continuous, as in five cases. The surgical importance of these facts cannot be overestimated. When associated with rapid wasting and loss of strength, which may occur in this disease, the clinical simulation of malignant disease of the head of the pancreas is complete and patients have repeatedly been denied operation under the impression that it was useless; a fatal blunder. Here also I may say that the mistake is not always rectified by simple exploratory operation, for the hardened nodular pancreas of advanced inflammation may so resemble carcinoma as to defy differentiation by direct inspection and palpation. Even the glands of the neighborhood may be greatly swollen as though by extensive metastasis. Robson, Moynihan, Mayo, and other leaders in upper abdominal surgery, have more than once mistaken inflammation for carcinoma, and I own to the same error on a number of occasions. In one case not only was jaundice and wasting present, but there was marked ascites due probably to the biliary cirrhosis or to pressure of the thickened head of the pancreas on the inferior vena cava. The patient made a good recovery after operation.

I have in mind now a physician of this community on whom I operated within the past year and closed with a hopeless prognosis of pancreatic carcinoma. The subsequent course has led me to believe that in this case I was deceived.

More often jaundice is preceded by pain as in gall-stone colic, though, as previously stated, the pain is apt to be less severe and not colicky in character. In the more acute forms of pancreatitis it is, of course, a well-known fact that the pain is of such agonizing severity as hardly to be compared with that of any other disease. Such an exacerbation may occur at any time in the course of chronic pancreatitis.

The combination of intermittent jaundice, pain and febrile attacks may also be perfectly characteristic of Charcot's hepatic intermittent fever. I have diagnosed stone in the common duct in such cases and when considering them later have been unable to find any reason why I should not do so again. I am not sure that a stone may not have been present and escaped shortly before operation, and I have referred to one instance above in which such was known to have been the case.

The degree of jaundice may vary from the slightest tinge to the "black jaundice" of the older writers, which was supposed to be diagnostic of malignant disease. Sialorrhea, though often mentioned, I have not observed.

General symptoms are usually well marked. The existence of chronic pancreatitis, to a degree that pancreatic function is seriously disturbed, is always associated with a loss of weight. This is due to several causes: First, to a restriction of the diet voluntarily or by advice of physician in the effort to control the symptoms of indigestion. At times impairment of the appetite is responsible for decreased intake of food, though loss of appetite is by no means a constant accompaniment of pancreatitis. In this series it is mentioned seven times. There is also no disgust for meat. The persistence of the appetite is a valuable point of difference from carcinoma. Second, it is due to malassimilation of the imperfectly digested food. Third, in the cases in which jaundice is present, to the influence of the biliary intoxication: and finally, in a few cases, to the absorption of the products of bacterial activity.

Loss of weight was noted in twenty-one cases. The state of nutrition at the time of operation was, in six cases, obese, in ten good, and in thirteen poor. Loss of strength follows loss in weight, and was complained of in ten instances. I have already referred to the rapid loss of weight and strength which may take place in some instances, particularly when jaundice is a marked symptom. The cachexia may be as rapid and extreme as in malignant disease. In the usual case such marked wasting does not occur.

In most instances fever was known to have been present and in five a history of chills and sweating was obtained. In one the temperature was slightly subnormal. In eleven at the time of operation it was between 98 and 99 F., in thirteen between 99 and 100 F., and in four between 102 and 103 F. Fever is not such a prominent symptom in the prolonged course of chronic pancreatitis as most figures would seem to indicate. As a rule the temperature is normal. Fever is present only during exacerbations. Between the attacks there may be non-committal indigestion. In thirteen cases of this series there was indigestion between attacks. The longest duration of the disease as estimated by symptoms was seventeen years; the shortest eleven days. Ten had had frequent attacks of varying severity.

The bowels, as a rule, are constipated. Nineteen patients suffered with chronic constipation, and in thirteen cases constipation was a feature of the attacks. In only five was there a history of diarrhea.

From this it will be seen that caution must be used in employing as an aid to diagnosis the classical description of "frequent bulky motions, pale in color, offensive and obviously greasy." As stated by Robson and Cammidge, such stools are present only in advanced conditions.

The physical examination rarely affords much positive information. It is of more value in excluding other abdominal conditions. During exacerbations there may be epigastric tenderness and rigidity. When this is true it is almost impossible to detect anything in the nature of a mass. During the intervals, in patients with thin flaccid abdominal walls, it is sometimes possible to palpate the swollen head of the pancreas. In three cases of this series a rather indefinable mass could be felt. More often a considerable degree of pancreatic swelling and sclerosis will defy appreciation through the body wall and overlying viscera. In the majority of instances the pancreas is well covered by the adjacent organs. Körte, who examined thirty cadavers with reference to this point, found that in twenty the pancreas was completely covered, while in ten some part of the gland was covered only by omentum. In six instances there was ptosis of the colon, with exposure of a portion of the head of the pancreas between the colon and liver. In two bodies it was exposed in the median cleft of the liver, and in two, which were the seat of marked gastroptosis, the pancreas could be palpated directly beneath the gastrohepatic omentum. In palpating through the body wall, however, these slight exposures of pancreatic tissue are rarely sufficient to give a definite sense of mass even to the tactus eruditus.

As most of these patients were operated on during or just after some exacerbation of symptoms there was a degree of tenderness present in most of them. In eight no tenderness was elicited. In the remainder tenderness was found below the right costal margin in twenty; beneath the left in three; in the mid-epigastrium in eleven; over Mayo-Robson's point in three, and in one more severe case it was general. Rigidity was observed in the right hypochondrium in nine cases and over the epigastrium in three. There was moderate distention in six cases.

Enlargement of the gall-bladder has been observed in a number of cases, but it was not felt prior to operation in this series. The liver, however, was noted as enlarged nine times.

The general examination at times may reveal loss of weight and jaundice as above stated.

The blood frequently shows a secondary anemia which is seldom grave. In about one-half of my cases the hemoglobin was below eighty and the erythrocytes below 4,000,000 per c.c. A moderate leukocytosis was present in a few of the more acute exacerbations. Generally the numerical ratio of the leukocytes was unaltered.

Now as to the various tests used to determine the functional activity of the pancreas and upper digestive tract: A gastric analysis was made in twenty-four cases. In two-thirds of these there was subacidity both of free hydrochloric acid and total acids. In no case was there a marked hyperacidity. In other respects the analysis was not abnormal. The great number of conditions associated with subacidity of the gastric contents deprives this observation of any diagnostic value.

Somewhat more information can be derived from examination of the stools. In ten instances they were clay-colored. It is well known that this characteristic does not depend so much on the absence of bile as on the presence of an excess of fatty acids or fat itself. The tests for stercobilin were positive in all of these instances, showing that bile was entering the intestinal tract. This is important and leads to the deduction that since the liver is functionating, the failure to digest the fats must be due to deficiency of the pancreas. An excess of neutral fat so marked as to be visible to the naked eye, i. e., steatorrhea, was present in only six cases, and an excess of soaps was found in five cases. In pancreatic disease the total amount of unabsorbed fat may reach 50 to 60 per cent. in cases of chronic pancreatitis, and even 75 to 90 per cent. in cases of malignant disease (Robson and Cammidge). Carnot says that after suppression of the bile alone, the feces contain 60 per cent. of fat; after suppression of the pancreatic secretion, 70 per cent. of fat; and after suppression of both bile and pancreatic juice, they contain 90 per cent. of fat. In health, according to Müller, "the unabsorbed fecal fats consist of approximately 20 to 30 per cent. of neutral fat and from 70 to 80 per cent. of split fat, which is partly fatty acids and partly soaps." R. Gaultier has shown that in cases of suppression of the bile there are found in the feces from 35 to 45 per cent. of the ingested fats; 63 per cent. of this exists as neutral fats, and 35 to 40 per cent. as split fats (21 per cent. as fatty acids, and 12 per cent. as soaps). He has found that, in cases of suppression of the pancreatic functions, 80 per cent. of the fecal fat is in the form of neutral fats, and only about 15 per cent. as split fats (10 per cent. as fatty acids, and 5 per cent. as soaps); and if both biliary and pancreatic secretions are absent, 90 per cent. of the ingested fat is recovered from the feces, of which 90 per cent. is in the form of neutral fats, and 11 per cent. as split fats (10 per cent. as fatty acids, and 1 per cent. as soaps). Müller found that in cases of pancreatic disease, even though the total percentage of fecal fat might not be increased above the normal, yet that the proportion of split fat is always decreased (averaging about 40 per cent. of the total fat), showing decrease in the digestive power for fatty food. It has been asserted by Katz that diminution of the split fat below 70 per cent. of the total fecal fat invariably signifies disease of the pancreas, except in nursing infants and patients with profuse diarrhea. It remains to be seen whether the quantitative relations of the fat and its derivatives in the feces will be of any great assistance. Since we have found practically normal stools in cases which presented very definite chronic pancreatitis, it is evident that a negative finding is not conclusive. Positive results, on the contrary, must be regarded as very suggestive, and the examination of the feces for its fat and bile contents constitutes a very important element in the diagnosis. Excess of muscle fibers could be found in those instances of palpably deficient pancreatic function, but was not a characteristic of this series. The digestion of protein material appears to be less helpful than fat digestion. Fitz has pointed out that the condition occurs "only when there is extreme diminution of the pancreatic juice, and is significant only when gastric digestion is normal, when the diet contains no excess of meat, and when there is no diarrhea" (Opie). In fact, the majority of stools showed nothing by which a presumptive diagnosis of lack of pancreatic secretion could be assumed. As Opie remarks, "in most instances a considerable part of the parenchyma is undestroyed, and is capable of performing, in part, at least, the functions of the gland." The characteristic stool of pancreatitis, when present, is of great value in the diagnosis, but when absent does not negative the existence of pancreatitis.

The examination of the urine has been given special prominence by the reaction of Cammidge, which has received the endorsement of such able surgeons as Robson and Moynihan. As is well known, this reaction consists in the demonstration in the urine, when treated by a rather complex chemical procedure, of certain crystals of a definite morphology and certain solubility characteristics, but of unknown composition, though it is thought to be a derivative of a pentose, probably an osazone.

A positive reaction is said to indicate the presence of simple pancreatitis. It has been found in a percentage of cases of carcinoma of the pancreas, which is explained by the originators as due to the presence of an inflammatory zone about the neoplasm. The improved or "C" reaction is now used to the exclusion of the old "A" and "B" methods.

The table published in Robson and Cammidge's recent book gives the reaction credit for accuracy rarely attained by any other laboratory method.

In sixty-seven cases of pancreatitis it was positive in every case. In sixteen cases of carcinoma of the pancreas it was found in four (25 per cent.). On the other hand, in fifty normal cases used as controls it was uniformly negative, while in 117 associated cases, in which there was no pancreatitis, it was positive only four times. This is a remarkable showing, and if obtained by others would almost obviate the necessity of obtaining a history, a physical examination or, indeed, seeing the patient at all. We have paid special attention to the Cammidge reaction in the German Hospital. Dr. Kinney has been especially interested in it, and his report of the first 154 "C" reactions appeared in the *American Journal of the Medical Sciences* (December, 1910). Following the cases included in his report we have had 197 additional cases, making, in all, 351, which constitutes a very fair experience by which to judge the merit of the test. While I am free to admit that the originator of the reaction can probably perform it best, yet his very detailed directions have been most carefully followed, and our results must certainly approximate the best obtainable under similar circumstances.

Of nineteen cases, in which the test was made in the present series, it was positive in four and negative in fifteen. This is a scarcely higher percentage of positives than we obtained in sixty cases in which the pancreas appeared to me to be normal to direct palpation at the time of operation. Ten of these sixty cases gave a positive Cammidge reaction. One-fifth positive in pancreatitis, as compared with one-sixth positive when no pancreatitis existed, does not inspire faith in the reaction. In fifty-five cases of chronic pancreatitis, confirmed at operation, some of which were complicated by other upper abdominal disease, there were eighteen positives (32 per cent.), a slightly better showing. Two acute cases were both positive. One case of pancreatic cyst was negative; one of pancreatic fistula was positive, and of eight cases of carcinoma of the pancreas, one-half gave the reaction. Roughly speaking, in all my cases in which the condition of the pancreas was determined accurately at the time of operation, this supposedly specific pancreatic reaction was obtained only about two and a half times as frequently when the pancreas was affected as when it was not. While this speaks for a degree of dependence on pancreatic disease, it does not, to my mind, indicate that that relation is by any means so intimate and constant as we had been led to hope.

The urine in suspected pancreatitis should be carefully tested for bile and sugar. Two cases in this series showed glycosuria. Sugar may appear in the urine during an exacerbation and clear up on subsidence of the inflammation. This is a threat of oncoming diabetes and should not be overlooked.

I have not used the Loew pupillary reaction, which consists in a dilatation of the pupil on instillation of epinephrin into the conjunctival sac. This is supposed to be due to some interrelation between the produce of the suprarenal capsule and the hypothetical internal secretion of the pancreas. Clinical reports do not accord it much value.

Nor have I had experience with the various methods of obtaining duodenal juice, either through the stomach or in the feces, and testing it for the presence of pancreatic ferments. It seems to me that as these ferments act in incredibly small quantities, so long as there is any pancreatic tissue functionating we would expect to get the reaction due to their presence. When they are absent the condition would probably be far advanced and capable of detection by simpler means.

The chief tests of this sort are as follows: Schmidt's test depends on passing a small piece of beef, enclosed in a silk bag, through the intestinal tract, and observing whether the muscles of the fibers showed digestion. Sailer quotes the work of Steele, who came to the conclusion that this was valueless.

Müller's test aims to demonstrate the absence or presence of a proteolytic enzyme in the feces, by observing whether digestion of blood-serum will take place when drops of fecal material, appropriately prepared, are placed on its surface.

Sahli's desmoid test consists in administering capsules, hardened in formaldehyd resistant to the gastric juice, but soluble in pancreatic secretion. In the capsule is placed a substance capable of rapid absorption and excretion in the urine, thus determining whether solution has been effected.

Solomon attaches great importance to the amount of lecithin in the feces, which is said to be increased in pancreatitis.

Fedeli and Romanelli have devised a test to measure the activity of carbohydrate digestion.

While it is too early to say that these tests have no value it is not likely that they will put an end to our difficulties in the diagnosis of chronic pancreatitis.

The appetite is usually fair or quite good. If nausea or vomiting occurs without severe pain, and if remittent jaundice comes on with distress, but without characteristic gall-stone seizures, the presumption is strengthened.

If the pancreas may be felt enlarged and tender, or the feces present the characteristic stool, the diagnosis can be made with a fair degree of certainty. It is often necessary to observe these patients over a considerable period of time to come to a definite conclusion. As this early non-characteristic stage is very like the non-characteristic beginnings of some forms of malignant disease in the upper abdomen, it is necessary to be guarded in the prognosis and the decision to delay operative treatment.

The chief conditions likely to be mistaken for pancreatitis are cancer of the pancreas, of the common bile-duct or the liver, gall-stones in the common duct, chronic cholangitis without stones, and chronic appendicitis of the type manifesting itself chiefly or solely by upper abdominal symptoms.

The treatment of chronic pancreatitis begins with the amelioration of the predisposing cause or causes, if they can be determined. When gastroduodenal catarrh is present as a result of vicious habits of eating or drinking, a reform must be instituted in these respects. When it is associated with disease of the biliary passages, treatment should be directed toward that condition. Wohlgemuth has shown that the pancreas responds actively to a carbohydrate diet, and that if rest for the inflamed gland is desired it is necessary to be sparing in articles of that nature. Carnot is enthusiastic in advocacy of supplying the missing elements of digestion by administration of a preparation of the gland. Sailer also reports good results in two cases treated on this basis. While such measures may suffice for mild cases, or at times for more severe forms, there are others that go from bad to worse on careful medical treatment. Continued loss of weight, persistence of indigestion, recurring exacerbations, jaundice or a lowered tolerance for carbohydrates as shown by transient glycosuria should cause the physician to advise operation. Epecially binding is this obligation if there be associated disease of the biliary tract.

In the surgical treatment of chronic pancreatitis, Mayo Robson occupies the same position as Fitz does to the development of our knowledge of the disease. He was the pioneer in showing that free drainage of the biliary tract, and through this outlet, drainage also of the pancreatic ducts, would in many instances enable the pancreas to cast off the infection and resume its normal function. This is, in a nutshell, the principle of the treatment, and though it may seem roundabout, its efficacy has now been demonstrated too often to admit of a question. The easiest and most advantageous method of providing drainage is by a cholecystostomy. If for any reason this is impracticable, drainage of the common duct should be done. At times when the closure of the common duct is complete and likely to be lasting, a cholecystenterostomy may be best, but as a general rule external drainage permits subsidence of the swelling of the pancreas and a reestablishment of the functions of the ducts. Drainage should be maintained for three or four weeks at least. It is difficult to keep the fistula from closing too soon, and in cases of marked pancreatic disease it is best to make a cholecystduodenostomy. Just how long this opening will remain patulous is a question, for I have reoperated in cases in which this operation had been performed, and have found the opening closed. It should not be forgotten, also, that cholecystduodenostomy is an operation of greater magnitude and slightly higher mortality than simple cholecystostomy.

The surgeon to-day makes the same plea for chronic pancreatitis as he made twenty years ago for appendicitis. Send patients early before complications create a mortality.

1634 Walnut Street.

A Funny Proposition.—The *Boston Transcript* makes the very pertinent remark that man is a funny proposition because, when he reads a medical book, he fancies he has every disease described; but when he reads the work of a moralist, all the faults that are pointed out he sees, not in himself, but in his neighbor.

INTESTINAL BACTERIOLOGY: A SUMMARY*

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It is the purpose of this paper to discuss certain factors of fundamental importance in determining the nature and extent of bacterial activity in the intestinal canal; to explain what these factors are and how they are arrived at; to indicate their significance and to point out how they may be applied practically in intestinal therapy. The results of which this paper is a summary were obtained chiefly by feeding animals (cats and monkeys) on diets consisting alternately of protein and carbohydrate. The alternations in diet were made biweekly. The object of these experiments was to determine the influence of diet on the character of the intestinal flora.

From the point of view of bacterial activity within it, the alimentary canal must be regarded as a wonderfully perfect incubator and culture medium combined—an incubator in which the range of reaction and diversity of foodstuffs is so great that practically all organisms capable of developing at the body temperature of the host can conceivably find some place suited for their development. It is necessary to keep this conception in mind, since the essential feature of the investigations about to be outlined consists of changing the food of the bacteria growing in this intestinal incubator in a perfectly definite manner and sequence, and observing the effects by studying the readjustments of the intestinal flora to meet the new conditions established as the food of the host changes.

The problem is one which must be approached from the dynamic rather than from the cultural standpoint, and the key to its solution must come from the biochemistry of the bacteria concerned in the process rather than from their cultural characteristics. As Dr. Theobald Smith has clearly and tersely expressed it: "It is what bacteria do, rather than what they are, that commands our attention, since our interest centers in the host rather than the parasite."

Before discussing the results in detail, it will be necessary to call attention to several features of the problem which are better mentioned here than later on:

1. In these experiments, the diet of the host was sharply limited to two classes of foodstuffs, and as a working hypothesis, it is fair to assume that the bacterial response to these dietary alternations would consist largely of alternations between proteolytic and fermentative types of organisms, respectively.

2. The intestinal flora can respond to these changes in diet in two ways: (a) the flora may become dominantly proteolytic, then fermentative, as the diet is changed, and (b) in addition to the alternations in bacterial types, certain organisms can actually change their metabolism to accommodate themselves now to a protein, now to a carbohydrate regimen.

3. The products of digestion of protein in the alimentary tract are far more numerous and varied in composition than are those of carbohydrate; consequently one would expect *a priori* that the protein flora would be more heterogeneous than that developed on a carbohydrate regimen. That such is the case is well illustrated by comparing the fecal floras of adults and nurslings. In the former, on a varied regimen, containing much protein, the flora is very heterogeneous, while that of the latter, on a monotonous diet in which protein is in the minority, and carbohydrate a prominent feature, the flora is relatively homogeneous.

The method employed in this work consisted essentially of inoculating the mixed fecal flora into suitable media and studying the resulting reactions in them. From time to time cultures of the prominent bacteria discernible in the fecal flora were isolated and compared with those growing in the cultures; by so doing it was possible to determine the suitability of these media for the purpose they were to fulfil, and to form a judgment of the character of the organisms which composed the fecal flora as well.

The media finally selected were gelatin (sugar-free), acetic acid-dextrose broth (N/5 acetic acid in 2 per cent. dextrose broth), dextrose, lactose and saccharose fermentation media and milk fermentation tubes (Smith). Each of these media presents certain specific advantages in addition to its general utility as a food for bacteria. Much valuable information was obtained from the study of Gram-stained preparations of the feces, fermentation tube sediments and from the growths in other media. It was possible to form a judgment of the suitability of the various media by comparing the prominent organisms in the feces and those in the media themselves.

These media could be divided, according to the kinds of bacteria growing in them into three groups:

Group 1: Gelatin: particularly adapted for the proteolytic forms.

Group 2: Acid dextrose broth: specific for certain fermentative organisms, chiefly of the *B. acidophilus* type.

Group 3: Fermentation media and milk: practically all the dominant bacteria represented in the feces grew well in these media, and consequently they were, in a sense, battle-fields in which the various types of organisms struggled for supremacy. The manner in which the mixed fecal flora acted in the media of Group 3 furnished a valuable clue to the dominant type of bacterial activity in the intestinal tract.

Turning now to the phenomena exhibited by the various bacteria of the alimentary tract as the diet was changed, it was found that as the protein flora became dominant, the Gram-stained fields prepared from the freshly passed feces contained many large and medium sized Gram-positive rods with rounded ends. Gram-negative forms similar to colon bacilli morphologically, and a few coccal forms also appeared. In addition, there were frequently moderate numbers of Gram-negative, thin rods.

Inoculated into gelatin, the mixed intestinal flora caused a decided liquefaction, which commenced as a rule within eighteen hours and continued until practically the whole medium was peptonized. In sugar broths there was a considerable volume of gas formed within eighteen hours, not infrequently 100 per cent. of the closed arm. The Gram-stained sediments from these fermentation tubes contained both the short, Gram-negative bacilli morphologically like *B. coli* and *B. proteus*, and also larger, longer and thicker Gram-positive rods which were morphologically similar to the so-called gas bacillus (*Bact. welchii*), but which were in reality organisms belonging to the *subtilis* group. It is noteworthy that the gas bacillus did not play any prominent part in the formation of gas in these media.

Acid dextrose broth remained unchanged, and there was very little growth in it.

Milk was vigorously attacked; the casein peptonized to a very considerable degree, and, usually from 50 to 80 per cent. of gas was produced, all within eighteen hours' incubation at body temperature. This rapid peptonization and gas formation in milk is a striking phenomenon, and deserves comment. The same action can frequently be brought about, although much more slowly, by inoculating milk contained in fermentation tubes with a culture of an organism belonging to the *subtilis* group, then, after peptonization has commenced, reinfect the medium with a pure culture of *B. coli* or *B. proteus*. Under these conditions the peptonization continues, and in addition, there is a voluminous liberation of gas. It is absolutely essential for the success of the experiment that the order mentioned be observed. If the colon bacillus is inoculated first, and then, after a preliminary incubation, the subtiloid organism be introduced, the phenomena mentioned will, as a rule, not take place. This is a true instance of symbiotic activity which is not confined to bacteria derived from the intestinal tract. I have encountered it in bacteria from meat and other albuminous products which have commenced to decompose. It should be stated that the combined activity of these two organisms is greater than the sum of their separate activities. The explanation that seems most thoroughly to explain all the facts is that the subtiloid bacilli first act, and, in the case of the milk, peptonize the casein, but do not attack the lactose; since this sugar is unfermentable by most subtiloid organisms. The solution of the casein in some manner makes the lactose more accessible to the action of the colon bacillus, and the alkaline reaction produced by the subtiloid bacillus tends to neutralize to a certain extent the acid produced by the fermentation of the lactose by the colon bacillus, so that the process can go much further than would be the case with the colon bacillus alone. On the other hand, the production of acid by the colon bacillus neutralizes the alkali produced by the subtiloid organism, thus preventing a too alkaline reaction, which would inhibit the activity of the subtiloid bacillus. In dextrose and lactose fermentation media, again, one sees the same phenomenon of unusual gas production when the same organisms are growing symbiotically. The explanation appears to be the same in these instances as well as in the milk.

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The organisms dominant on a protein diet, then, are of two principal types: liquefying and aerogenic bacilli, respectively. Of the former, the subtiloid bacilli appear to play the most prominent rôle, while *B. coli* and the various forms of *B. proteus* are the most commonly encountered aerogens. Anaerobes do not play an essential part in these processes.

A change in diet from protein to carbohydrate was associated with perfectly definite changes in the character of the fecal flora. The fecal Gram-stained fields became strongly Gram-positive in place of the more or less equal distribution of Gram-positive and Gram-negative organisms. The organisms were longer, more slender, and frequently were seen to be slightly curved. The flora was also much more homogeneous in appearance.

In gelatin there was very little growth when the carbohydrate flora became fully established, and the organisms which did develop were vestiges of the protein flora.

Acid dextrose broth on the contrary contained a good growth which consisted almost wholly of the rather long, slender curved organisms discernible in the Gram-stained fields of the carbohydrate fecal flora. These organisms were of the *B. acidophilus* type, and in consequence of the acidity of the medium (N/5 acetic acid) were in practically pure culture.

The sugar broths (dextrose, lactose and saccharose) and milk fermentation tubes were less visibly changed with the carbohydrate flora; the gas volume was very much diminished both in the sugar broths and milk, and the actual amounts of growth were also less than was the case when protein feces were inoculated. As a rule less than 10 per cent. of gas was produced in the sugar broths, the turbidity in the closed arms of the fermentation tubes was less marked, and the sediments showed both the long, thin Gram-positive organisms noted above (*B. acidophilus*) and similar, slender organisms, also Gram-positive with bifid ends. The latter organisms were found to be *B. bifidus*, organisms very common in the fecal flora of normal nurslings.

In milk there was no gas formation, and no peptonization. The milk, however, was firmly coagulated.

The significance of these changes appears to be explained by the fact that the fermentative organisms of the *acidophilus* and *bifidus* types produce acid rapidly from the time they are inoculated into the various media in which they thrive, and that this acid-production is so rapid and so intense that even the rapidly growing colon and subtiloid bacilli cannot develop in its presence. This is true, of course, only in those media containing fermentable sugar. In gelatin, which contains no sugar, or in plain, sugar-free broth, the fermentative organisms of the *acidophilus* and *bifidus* types will not grow, and one finds in such media the typical proteolytic flora—*B. coli* and *subtilis*.

To recapitulate: It will be seen that in experimental animals, alternations in diet between protein and carbohydrate are associated with rather definite changes in the character of the intestinal floras of these animals. These bacterial changes are demonstrable both by staining reactions and by the changes produced when the mixed floras are inoculated into media. These changes consist essentially of alternations between proteolytic and gas-forming bacteria on a protein diet, and acid-forming bacteria on a carbohydrate regimen. The absence of carbohydrate prevents the development of the acid-forming bacteria on a protein diet, and the excessive amounts of acid produced by the fermentation of sugar inhibits the growth of the proteolytic and aerogenic forms on the carbohydrate regimen.

THERAPEUTIC APPLICATION OF FINDINGS

Turning now to the practical application of these results to intestinal therapy, we may conveniently consider them in two groups:

1. Those cases in which there is an overgrowth of undesirable forms of the bacteria more or less commonly present in the intestinal tract. These organisms do not, as a rule, bring about appreciable lesions of the intestinal mucosa. The activity of these bacteria is limited to their more or less unrestrained growth in the intestinal contents, and their harmful effects are attributable to the absorption from the intestinal tract by the host of their products of metabolism. Some of these products have been shown experimentally to be actually harmful. These endogenous infections may cause diarrhea, as well as that rather indefinite chain of symptoms known as auto-intoxication of intestinal origin.

2. True exogenous infections, in which foreign bacteria such as the typhoid, dysentery and cholera bacilli gain and maintain a foothold in the alimentary tract. These organisms are able to penetrate the intestinal mucosa.

The treatment of these conditions, from the bacterial standpoint, involves the principles elucidated above. It was stated in the preceding paragraphs that not only do the *types* of bacteria change with a change of diet on the part of the host, but also that certain bacteria have the property within limits of accommodating their metabolism now to a protein; now to a carbohydrate regimen. These latter organisms, then, are facultative in their metabolism. This change in metabolism to meet dietary requirements is a very fundamental and important characteristic of many bacteria, and inasmuch as it plays a prominent rôle in the problems of intestinal therapy which are concerned with the activity of bacteria, it will be discussed in some detail.

A few examples will first be cited to indicate the effect which this accommodation of metabolism has on the host in which such bacteria may be living.

Dr. Theobald Smith has shown, in his classical researches on the production of diphtheria toxin in broth, that the presence or absence of fermentable sugar plays an important part. If utilizable carbohydrate is present in the medium in which the bacilli are growing, the organisms will attack the sugar in preference to the protein; if there is an excess of sugar, so that the bacilli form enough acid to prevent further growth before it is exhausted, very little toxin, comparatively is produced. If there is a lesser amount of sugar (0.2 per cent. or less), merely enough to cause the bacilli to grow well, this sugar is soon used up, and then the bacteria attack the protein vigorously and there is a simultaneous increase in the toxin production.

(In this discussion, no attempt is made to explain the origin or composition of the toxin other than to call attention to the fact that it is formed under the conditions stated in media containing protein, or protein decomposition products, and that the presence of more than minimal amounts of sugar in these media is sufficient to seriously inhibit its formation. The fact that toxin is apparently formed in appreciable amounts from such simple organic compounds as salts of aspartic acid has nothing to do with the problem under discussion, although it is very probable that even in these so-called synthetic media, the presence of sugar would act in precisely the same manner as it does in the more complex proteins.)

A certain minimal amount of sugar appears to be essential for the formation of a potent toxin, and Dr. Smith has suggested that one, or both, of two factors may explain this phenomenon. Either this small amount of sugar is an essential component of the food of the bacteria, or the slight amount of acid formed by the fermentation of this sugar prevents the accumulation of too much alkali until the toxin formation has progressed to a very considerable degree. It is not improbable that both factors are concerned in the process.

According to unpublished investigations made by Dr. Smith, the same phenomenon is exhibited by the gas bacillus (*Bact. welchii*). This organism, so Dr. Smith tells me, produces a toxic substance when it is grown in fermented (sugar-free) broth containing sterile tissue, but this toxic substance is not formed if the same organisms are grown in unfermented broth, with tissue.

Many other organisms act in precisely the same manner when they are placed in media containing sugar; the presence of the sugar appears to prevent the breakdown of protein, at least in any considerable quantities. Attention was called in a preceding paragraph to the fact that there was in the intestinal tracts of mammals and man a group of facultative bacteria which could accommodate their metabolism to either a protein or a carbohydrate regimen. These organisms act in the same general manner as the diphtheria, tetanus and gas bacillus under similar conditions.

Bacillus coli is a well-known example of this group, and inasmuch as it is an organism of great importance in the intestinal tract, it will serve admirably for an example. If this organism is grown in broth containing an excess of utilizable sugar on the one hand, and in broth of precisely the same composition and reaction, but without the sugar on the other, it will be found that the chemical products formed in the two media will be widely different in composition. In dextrose broth, for example, the odor after an incubation of a week will be agreeable, the reaction acid, and in addition to the gaseous products CO_2 and H_2, lactic, and smaller amounts of succinic and acetic acids will be found. It will be observed that products of protein decomposition are practically absent, on the other hand. This growth is therefore a fermentative process and not a proteolysis; merely enough protein has been metabolized to meet the nitrogen requirements of the bacilli.

In the broth containing no sugar, on the contrary, but of otherwise the same composition (plain nutrient broth), the odor will be found to be disagreeable, the reaction strongly alkaline and in addition, indol, skatol, aromatic oxyacids and other products of protein putrefaction will be present in considerable amounts. This is therefore a typical putrefaction.

The organisms mentioned above, then, diphtheria, tetanus, gas and colon bacilli, all react in a perfectly definite manner when grown in media with and without fermentable carbohydrate. If carbohydrate is present, these organisms form acid products which are non-toxic, while they attack protein vigorously in the absence of sugar, elaborating products which are frequently more or less harmful to their host. (It should be stated parenthetically that by "attacking protein," as used in this connection, protein of various degrees of degradation from native proteins is meant.)

Two important and general properties of bacterial activity are illustrated by these experiments:

1. Fermentation takes precedence over putrefaction, that is, carbohydrate shields or spares protein from bacterial attack. The same generality holds in the metabolism of the human body; carbohydrate spares protein.

2. Toxic substances are not formed to any extent in media containing more than minimal amounts of utilizable carbohydrate, so long as there is enough carbohydrate for the bacteria to act on.

When we remember that bacterial toxins are, so far as we know at present, associated with the breakdown of protein, the significance of this shielding action of carbohydrate for protein becomes apparent.

In those cases referred to above as endogenous infections, that is, in which there is an overgrowth of bacteria of intestinal origin, the most noticeable, or at least most common, pathologic result is the slow absorption of putrefactive products, which not infrequently are the results of a too liberal protein diet.

Metchnikoff has recognized this condition and his lactic acid therapy is designed to correct the trouble. His treatment consists essentially in cutting down the protein of the diet, pushing up the sugar, and administering lactic acid bacilli by mouth. He explained the beneficial results which frequently attended this treatment by the antagonism of his lactic acid bacteria to the putrefactive organisms in the intestinal tract. While his lactic acid bacilli do, as a matter of fact, act in a salutary manner, it must be remembered that there are also present in the intestinal tracts of most individuals normal lactic acid bacilli which also produce lactic acid. These latter organisms appear to thrive best in the large intestine, while the artificial cultures seem to find conditions most favorable for their growth in the small intestine. Hence, the normal lactic acid bacilli, fermenting the sugar which is intentionally added to the diet of the host, antagonize the putrefactive bacteria on their own grounds. Not only do the normal lactic acid bacilli proliferate under these conditions, but the organisms which are producing the bulk of the putrefactive products, at least indol and skatol, change their metabolism under the new conditions, and become fermentative instead of putrefactive in character. The indol and skatol are no longer formed under these conditions, and the condition of the patient appears to be improved. The colon and proteus bacilli, which are strong indol-formers, in other words, produce acids instead of proteolytic products so long as sugar is available for their use.

The same principle of changing the metabolism of bacteria may be made use of in the second group of intestinal infections, those of exogenous origin. The best-known examples of such infections are those of typhoid, cholera and dysentery. The latter only will be discussed, because the attempt has been made to utilize the principles outlined above in the treatment of this disease in infants. The Shiga type of *B. dysenteriæ* produces a powerful extracellular toxin, and the work of recent observers would indicate that it is formed only in broth having a strongly alkaline reaction. From what has gone before, it is obvious that this condition of a strongly alkaline reaction is realized only in the absence of fermentable sugar. It is equally true that the Shiga bacillus ferments dextrose, producing acid. It follows, therefore, that if this organism is fermenting dextrose it is not producing toxin, if our supposition is correct. The Flexner type of *B. dysenteriæ* agrees with the statements about the Shiga bacillus made above, except that this form does not produce an extracellular toxin. It does, however, elaborate an intracellular toxin apparently.

The intestinal flora of babies suffering from bacillary dysentery consists essentially of three organisms: *B. dysenteriæ* [Shiga, Flexner, or both], *B. coli*, and the streptococcus.

As a routine treatment, such babies are starved, and this starvation, together with the severe diarrhea, which is a feature of this disease, results in a very thorough cleaning out of the alimentary canal so far as food of any kind is concerned. This dysenteric flora, then, is living on the intestinal secretions in the absence of sugar (the sugar of the body is used up quickly, and the body then draws on its nitrogen to keep up the vital functions), and it is essentially putrefactive in nature. The dysentery bacilli are elaborating toxin, while the colon bacilli are forming putrefaction products, both of which must be harmful to the child. The colon bacillus aids the dysentery bacillus, and the host has to detoxicate such putrefactive products as are absorbed by the alimentary canal in the liver, and excrete them through the kidneys. This throws an additional strain on an already weakened organism.

The principle involved in the treatment of bacillary dysentery, from the point of view of the bacteria concerned in the morbid process, is to feed carbohydrate. This carbohydrate is intended primarily to change the metabolism of the organisms in the lumen of the intestinal canal from proteolytic to fermentative bacteria. These bacteria, therefore, so long as there is sugar present which they can utilize, no longer produce toxins and putrefactive products from the protein of the intestinal contents, but acids instead. The patient is at the same time obtaining a readily utilizable food with a minimal expenditure of digestive energy. Another advantage gained by this procedure is the readiness with which the baby takes the requisite amount of water. Experience has shown that it is very difficult to make infants take water, but the addition of the sugar makes it more palatable. This method of introducing fluid does away with the disagreeable necessity for saline infusions which are often a source of trouble.

It is not a matter of indifference which sugar is fed to these patients. Lactose appears to be the most advantageous for several reasons. In the first place, it is a sugar peculiar to mammals, and not many bacteria other than those normally present in the alimentary canal can utilize it. Consequently, if the digestion of the patient is weakened to such an extent that it can not even hydrolyze lactose, there is no great harm done because the exogenous bacteria cannot use the lactose as such. Again, lactose is physiologically the most easily assimilable carbohydrate.

If, then, lactose is fed to dysentery babies by mouth in small, often repeated doses, the bacterial changes following its administration are as follows: The colon bacilli and other lactose-fermenting organisms of the intestinal tract attack the sugar in preference to the nitrogenous substances, forming acids in place of putrefactive products. Lactic acid predominates among these acids, and this acid is apparently inimical to the development of the dysentery bacillus. The patient benefits in two ways from the change in metabolism of the colon bacillus—there is a diminished formation of putrefactive products, and in addition those dysentery bacilli in the lumen of the intestine are exposed to the lactic acid generated by the colon bacilli. Usually there are a few of the normal intestinal lactic acid bacilli left in the alimentary canal, and these too begin to proliferate and to form lactic acid; this increment in acid formation acts even more energetically in opposition to the dysentery bacilli.

Under these conditions the streptococcus tends to disappear, and this is a point of considerable importance, since the streptococcus frequently appears as the terminal infection in dysentery cases. The cause for this disappearance is at present unknown to me. It is a curious fact that one may recover cultures of these or similar cocci by growing the fecal mass in strongly alkaline broth (N/5 Na$_2$CO$_3$).

If the digestion of the patient is still active enough to break down the lactose, the dysentery bacilli themselves will become acid-formers instead of toxin-producers, because these bacilli can attack dextrose, which is one of the hydrolytic products of lactose. This applies principally to those bacilli which are found in the lumen of the alimentary canal; those in the mucosa would at first sight seem inaccessible, but the stream of sugar which is absorbed by the host passes through the mucosa, and in addition it is possible to restore the normal sugar content of the blood by transfusing dextrose. The sugar is carried to all parts of the body, and it is not at all impossible that some of it may even reach the invasive organisms, and be utilized by them.

It is clearly not the purpose of this paper to discuss the factors other than the use of sugar in the treatment of these cases; all that is hoped for here is to present the development of the subject of intestinal bacteriology in so far as I have had a hand in it, and to show that these purely laboratory studies can be made use of in the therapeutics of the intestinal canal.

It is obvious that this general principle of fermentation taking precedence over putrefaction can be made use of in many instances, both medical and industrial, in which bacterial activity plays a rôle.

THE TREATMENT OF SUPPURATIVE OTITIS MEDIA (SCARLATINAL) BY BACTERIAL VACCINES (BACTERINS)*

BASED ON ONE HUNDRED CASES OF PATIENTS TREATED IN THE PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES, BUREAU OF HEALTH

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The treatment of various subacute and chronic infections by means of bacterial vaccines has been successful enough to offer encouragement as a practical therapeutic measure, and we undertook the treatment of suppurative otitis media by this means. Of the sequelæ of scarlet fever, otitis media is one of the most troublesome and dangerous, both to the patient and the public health in general. Of 2,537 patients received in the scarlet-fever hospital from June 1, 1907, to June 1, 1909, 308 patients, or 8.2 per cent., developed suppurative otitis media. The usual treatment is unsatisfactory in many respects; the duration of otitis media is frequently prolonged; the contagium of scarlet fever, whatever it may be, seems almost certainly present in ear discharges; the dismissal of a patient with such aural discharges is thus dangerous to public health; therefore any treatment which will cure these patients more quickly and more satisfactorily than the usual methods will be certainly most welcome. The treatment of these infections by bacterial vaccines is based on good reason, although mostly theoretical. The results have been fairly satisfactory when a good technic has been followed, so that we commenced this work with the realization that of all forms of treatment, this is one of scientific aspect, and that results must be given in an impartial and scientific manner; in other words, the report is a plain statement of facts, whether such be favorable or otherwise.

The theory of the action of bacterial vaccines as promulgated by Wright is well known to every one. He has demonstrated the presence of a substance in the blood which prepares organisms for phagocytosis. These substances, opsonins, are normally present in the blood in varying amounts. They can be increased by the administration of an emulsion of bacteria which have been killed by heat at the minimum degree of temperature (vaccine). If the offending organism itself can be secured and used in the preparation of the vaccine (autogenous), better results will follow. The opsonins are probably formed in part by connective tissue cells, both generally, and locally at the site of injection. This is the reason for selecting the area of administration as near the lesion as possible.

The present study is based on the treatment of one hundred cases, extending over a period of nine months. Otitis media is a condition offering good hope for success by vaccine treatment, because the condition is local; the offending organisms can usually be easily secured; the infection soon becomes subacute and chronic and the results of treatment can be readily observed. The onset of the disease is frequently most insidious; a large number of children do not complain at all, and the first indication of trouble is the presence of discharge. On the other hand, many adults and older children suffer considerable pain. In a series of 406 cases the discharge first appeared on the following days of the illness, reckoning from the day of onset of the scarlet fever:

Day of Illness	No. of Cases	Day of Illness	No. of Cases
1 to 5	27	20 to 35	81
5 to 10	97	35 to 49	35
10 to 20	155	49 to 84	11

Patients suffering with severe throat symptoms are most likely to develop suppurative otitis media by direct infection through the Eustachian tube. On the other hand, cases are apparently produced either by general blood infection or by the toxins of the disease.

The first question is that concerning the best time for commencing vaccine treatment of cases of otitis media. Certain it is that a proportion of patients will recover in a reasonable length of time if left alone or given simple local treatment. It is equally certain that a proportion continue discharging for a long period of time, it may be for the remainder of life, the soft parts and finally the osseous tissue being involved. Experience has demonstrated that it is not wise to commence too early, and it is equally bad practice to wait too long, because long-standing cases are likely to be more refractory to treatment and the mechanism of hearing may be considerably damaged. During the acme and early decline of scarlet fever the patient may be having considerable fever; he may be toxic enough without the addition of vaccine or be suffering with acute nephritis and its accompanying toxemia; finally the general condition may be so poor and the body defences so busy combating the toxic condition that the administration of vaccine will evoke no favorable response, but produce injury by a prolonged negative phase, during which the organisms work increasing havoc. We commenced vaccine treatment in our cases according to the following table, reckoning from the first day of the onset of the otitis media as indicated by the presence of discharge:

Time of Discharge	No. of Cases
Third to seventh day	6
Seventh to fourteenth day	33
Second to third week	21
Third to eighth week	28
Eighth to fourteenth week	10
Four years	1
Ten years	1

According to our experience the best results were secured, considering all things, when cases were reported on the third day of the discharge. This enables one to watch the patient for a day or so; take a culture; consume five or six days in isolating the organisms and preparing the vaccine. If at the end of this time the patient's general condition was fair and he was free of fever, nephritis and toxemia, a dose of vaccine was administered. If his condition was not favorable, the vaccine was put aside in a refrigerator. If at the end of ten days his condition warranted commencing the treatment, we did not use the first vaccine, for frequently a reculture will show a different organism or the presence of an additional offender. A reculture is made from the discharge and another vaccine prepared.

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* For the sake of brevity references to the literature which appear in the author's reprints have been omitted in The Journal.

The following table is a list of the organisms isolated from cultures of the 100 cases. If the otitis media was bilateral a culture was taken from each ear. If two organisms were found, each was isolated and a separate vaccine prepared. When administering two vaccines to the same patient, the aggregate dose was that equalling the dose of one organism. The bacteriology was comparatively simple and isolation readily accomplished:

Staphylococcus aureus	was found alone in 14 cases
Staphylococcus albus	was found alone in 2 cases
Bacillus pseudodiphtheriæ	was found alone in 35 cases
Bacillus pyocyaneus	was found alone in 20 cases
Streptococcus pyogenes	was found alone in 4 cases
Staphylococcus aureus and *B. Pseudodiphtheriæ*	were found together in 9 cases
Streptococcus pyogenes and *B. Pseudodiphtheriæ*	were found together in 4 cases
Bacillus pyocyaneus and *B. Pseudodiphtheriæ*	were found together in 9 cases
Streptococcus pyogenes and *B. pyocyaneus*	were found together in 3 cases

If no improvement was noted after the third dose of vaccine, or if ten days elapsed before vaccine could be administered to a case after culture had been taken, a reculture was made and a new vaccine prepared. In many cases, an ear cultured three to four days after the onset of discharge will show the *Staphylococcus aureus*; while on reculture at a later date the *Bacillus pseudodiphtheriæ* will be found. Most of the long-standing cases yield *Bacillus pyocyaneus*, and repeated culturing can secure nothing else. The following table gives the list of organisms secured by recultures:

Bacillus pyocyaneus	was found alone in 20 cases
Bacillus pseudodiphtheriæ	was found alone in 6 cases
Staphylococcus aureus	was found alone in 2 cases
Bacillus pseudodiphtheriæ	was found in combination with *Streptococcus pyogenes*; once with *Bacillus pyocyaneus*, and twice with the *Staphylococcus aureus*.

Cases cultured on the third or fourth day of discharge show the *Staphylococcus aureus* in many instances. A vaccine prepared of this organism usually gives good results. A week or ten days later it is often replaced by the *Bacillus pseudodiphtheriæ*, or this organism is found in addition.

It may be well to add here a few words in explanation of the term "pseudodiphtheriæ." We are aware that many opinions exist on what should be thus named. We apply that term here to a solid type of diphtheria-like organism resembling some of the solid types of true diphtheria bacilli, but without virulence or toxicity when tested in a reliable manner by animal inoculation.

We have frequently encountered, isolated, and cultured a short, thick, solid bacillus having rounded ends, with slightly marked median band, characteristic of the *Bacillus hofmanni*. We could never foretell by microscopic examination alone whether solid types of diphtheria-like bacilli were or were not virulent, but relied on an animal test for such information. We believe that a true pseudodiphtheria bacillus exists which belongs to the family of diphtheria bacilli, but have never been able to recognize it with confidence by mere microscopic examination. Twenty-two of the cultures were tested by guinea-pig inoculation and found negative. Two additional cultures, isolated from discharging ears in the diphtheria wards, produced most virulent toxins. Therefore, we believe that the presence of diphtheria-like organisms in the ear can be determined by microscopic examination, but only an animal test can determine whether or not the organisms possess virulence and are a menace to public health. The presence of this organism in 57 per cent. of the cases shows its important position in the etiology of otitis media and its relation to diphtheria of the ear.

The *Bacillus pyocyaneus* was found in 20 per cent. of cases discharging for four weeks or longer. This organism is believed by many to be a practically harmless saprophyte, feeding on tissues killed by some other organism. In 10 per cent. of our cases this was found alone or in combination with some other organism as early as the third to fourteenth day of discharge. The results of its vaccine were satisfactory in these early cases, and while the administration of a vaccine prepared from this organism may have been merely coincident to a rapid cure, yet we cannot agree with those who claim its vaccine to be practically without effect, for we believe that it is at least worthy of trial. On the other hand, of the fifteen patients dismissed from the hospital with persistent discharging ears, thirteen gave this organism in pure culture and its vaccine did not produce favorable results.

All of the various groups of streptococci are here listed under one name. A vaccine prepared from this organism gave quick and favorable results each time. It was found alone or in combination in 11 per cent. of cases.

We prepared and used autogenous vaccines for every case except one. This case was one of ten years' standing, following measles. The patient was admitted with scarlet fever and recovered in a satisfactory manner. He was detained, however, on account of the discharging ears, for although the otitis did not develop during the course of scarlet fever, yet his ear discharge was most likely infected, and therefore it was considered dangerous to dismiss the patient. Repeated cultures yielded the *Bacillus pyocyaneus*. A vaccine produced some improvement. Then a stock culture of *Staphylococcus aureus* and *Bacillus pseudodiphtheriæ* was tried. Granulation was rapid and all discharge ceased after the fourth dose. His ears were dry for ten days before dismissal from the hospital.

The question of dosage has always been one of paramount importance in vaccine therapy. Wright's technic for determining the opsonic index was received as being an exact guide to amount and frequency of dosage. There is considerable evidence to show that its practical value has been overestimated, and while in skilful and exact hands its results are of aid, yet the procedure consumes so much time and its results are apt to be so misleading, unless performed in an exact, patient manner, that it can be well dispensed with in ordinary practical work. We learned to rely more and more on the clinical aspect of our patients. It is very important to avoid producing a prolonged negative phase, or giving a dose of vaccine during this period. Careful opsonic work has demonstrated what usually occurs after the administration of a vaccine and the importance of avoiding this phase of the reaction. We have frequently seen the harmful effects of too large a dose at too close an interval between doses. The tendency is to give smaller doses with longer intervals between each. As a rule the sicker and weaker the patient, the smaller the dose. In this work no fixed rules of dosage were used. Each case is a law unto itself. Dosage must be controlled in each patient according to temperature reaction and the local and general condition of the patient. The initial dose for the average patient 10 years of age was about as follows:

Staphylococcus aureus and albus,	15 to 40 millions
Bacillus pseudodiphtheriæ,	30 to 50 millions
Streptococcus pyogenes,	5 to 10 millions
Bacillus pyocyaneus,	50 to 80 millions

It is well to give a small dose at first and note the extent of the reaction. This reaction will be a good guide for determining the size of the succeeding dose. Doses were repeated every five to eight days. In our earlier cases they were given at shorter intervals, but results did not warrant the continuance of the practice. Succeeding doses were increased by five to ten millions if necessary. Following the administration, the majority of patients develop a temperature varying from 100 to 102 F. in about eight hours, gradually reaching normal in twenty-four to thirty-six hours. We have seen the temperature fall a degree or so to subnormal after an injection, reaching normal at the end of twenty-four hours. A second dose should not produce so much fever, and when doses are properly selected, the temperature reactions are quite conspicuous, each being lower than the preceding, as the patient's system is charged with an increasing quantity of opsonins, until finally no fever follows the administration. The local reaction is usually quite typical. If one has succeeded in securing the organisms producing the infection its vaccine will produce an increased amount of discharge for twenty-four to thirty-six hours. This is of good prognostic value. The discharge may gradually diminish in amount or cease suddenly and entirely. The general improvement in health in many of the patients was indeed striking. It is difficult to decide what proportion of good may be ascribed to the vaccine, but certain it is that improvement in nutrition so frequently followed the administration of the vaccine that one was forced to notice the relation. It may be that the injection of the vaccine served as a stimulus to the increased production of receptors which were used in anchoring additional nutritive material. In addition to the temperature and local reaction the patient, if old enough to express himself, will sometimes complain of lassitude, sleepiness, slight headache, etc. We have been fortunate enough to escape abscess formation. Streptococcus vaccine in every case produced a local reaction of redness and pain at the site of infection, which passed away in twenty-four hours with rest and evaporating lotions.

As in all hypodermatic medication, it is necessary to use an accurate syringe. This is especially true in vaccine work because wasting even a few drops alters the size of the dose to an extent difficult to compute. We gave the injection in the loose areolar tissue over one of the scapulæ. Since children frequently sleep on the abdomen we made it a practice to administer the vac-ine at night when the part could be cleansed and when he injection was given frequently without awakening he child. The temperature, pulse and respiration of he patients were taken every four hours for the first wenty-four hours, and longer, if necessary, until the ormal was reached. Notes were made every other day n the progress of the case.

During the administration of vaccines every other orm of treatment was suspended. Syringing the ears vas especially interdicted, for unless it is performed in a kilful manner, and with a proper syringe, more harm han good may result by reinfection of healthy parts. Four of our cases were persistently refractory for over three weeks, when it was learned that the nurse in charge was syringing out the ears with great zeal through an oversight, not having been instructed to stop all treatment. These cases rapidly progressed in a favorable manner to ultimate cure when this local treatment was stopped. No treatment is given, except wiping away the secretions when discharged over the neck and cheek. The ordinary cotton plug in the canal frequently does no more than dam back the secretions. Once or twice a day the external auditory canal is gently cleansed with cotton and applicator to avoid inspissation and consequent plugging.

The following table shows the number of doses given to secure a favorable result, or convince one that vaccines were giving no aid:

16 patients	received	1 dose	(13 cured; 3 died).
11 patients	received	2 doses	(10 cured; 1 improved).
15 patients	received	3 doses	(14 cured; 1 improved).
10 patients	received	4 doses	(10 cured).
10 patients	received	5 doses	(9 cured; 1 improved).
9 patients	received	6 doses	(8 cured; 1 not improved).
4 patients	received	7 doses	(4 cured).
4 patients	received	8 doses	(2 cured; 1 improved; 1 not improved).
3 patients	received	9 doses	(3 cured).
3 patients	received	10 doses	(2 cured; 1 improved).
4 patients	received	11 doses	(1 cured; 3 improved).
3 patients	received	12 doses	(2 cured; 1 improved).
3 patients	received	14 doses	(1 cured; 1 improved; 1 not improved).
1 patient	received	15 doses	(1 not improved).
1 patient	received	16 doses	(1 cured).
1 patient	received	17 doses	(1 cured).
2 patients	received	18 doses	(2 cured).

If the otitis has been present for a considerable length of time the bony parts are affected, and consequently the time required for cure will likely be longer. Even after the infection has subsided a discharge of necrotic material or secretions of granulation may be present for some time. On the other hand, there are cases in which suppuration will progress most actively despite all one may do. These cases have been repeatedly cultured, and as many as six vaccines prepared for each case but with no beneficial result. All such patients were in a poor physical condition.

It is a difficult matter to decide when an ear is cured. Often the discharge may cease entirely for a few days or a week, and then commence again. It is customary in the Philadelphia Hospital for Contagious Diseases to retain all such patients until the ears have been constantly "dry" for a week or ten days. If the time required for such a result reaches four months the patient is discharged, for while the ears may be suppurating, they are not likely to be contagious. Most of the cases under vaccine treatment progress gradually in a favorable manner, although many stop discharging quite abruptly with one or two doses of vaccine. It is necessary to guard against supposing an ear free of discharge when cerumen is plugging a perforation of the tympanum. The longer the time one can observe these patients after cessation of discharge the better will one be enabled to judge of what the ultimate outcome will be. Practically all patients with scarlet fever are detained in the hospital for at least five to six weeks. At the expiration of this time parents are very anxious to have their children returned, and if they are detained longer, as in cases of otitis media, this anxiety is often under high pressure.

We have always endeavored to watch a case for at least ten days after all discharge has ceased. Most of our cases were from the poorer crowded sections of the city where it is a very difficult matter to keep trace of them after dismissal from the hospital. The final test of value of any form of treatment can be judged only by results after a long lapse of time. The following table gives the number of days in which cases were "dry" preceding discharge from the hospital:

4 to 10 days	37 cases
10 to 18 days	27 cases
18 to 28 days	11 cases.
28 to 42 days	6 cases
3 months	1 case

Each case was thoroughly examined by Dr. Woody, chief resident physician of the hospital, three times before dismissal.

As already stated, the real value of the vaccine treatment in these cases of otitis media can be determined only at a much later data. However no "return" cases have been traced either directly or remotely to any of these patients. At the present we can estimate the value of the vaccine treatment by considering the time required to accomplish a cure under the usual form of treatment and that required under vaccines; also by the number of patients dismissed at the expiration of three to four months with ears still discharging. To determine this the records of the hospital have been studied and the results tabulated (Woody):

The table is very important because it compares the percentage of patients who were cured under the usual treatment with those cured under vaccine treatment during an equal number of days:

Number of cases admitted to Scarlet-Fever Hospital from June 1, 1907, to June 1, 1909, 2,537.

Number of cases of suppurative otitis media developing during this period, 308, or 8.2 per cent.

	Usual Treatment.	Vaccine Treatment.
1 to 10 days	3.24 % cured	22 % cured
10 to 20 days	7.47 % cured	22 % cured
20 to 30 days	11.69 % cured	21 % cured
30 to 40 days	17.86 % cured	8 % cured
40 to 60 days	19.15 % cured	4 % cured
60 to 90 days	9.41 % cured	4 % cured
90 to 120 days	2.28 % cured	1 % cured
Dismissed with ears still discharging	13.96 %	15 %
Died ears still discharging	14.94 %	3 %

This table demonstrates that under vaccine treatment 21.99 per cent. of cases are cured in from one to thirty days as compared to 7.46 per cent. under usual treatment in the same period of time.

Of the fifteen patients receiving vaccine treatment and dismissed with ears still discharging, one was "running" six weeks, and five from twelve to fourteen weeks before vaccine treatment began:

4 received vaccine treatment on fifth to twelfth day of discharge.
5 received vaccine treatment on fourteenth to twenty-eighth day of discharge.
1 received vaccine treatment during sixth week of discharge.
5 received vaccine treatment during twelfth to fourteenth week of discharge.

It is reasonable to suppose that if vaccine treatment had been given to the six patients before the expiration of six weeks and longer, more favorable results would have been obtained.

No deductions can be drawn from the number of patients succumbing with ears discharging. Most of these deaths occurred during the year 1907-1908 when scarlet fever was unusually severe; during 1908-1909, the disease was quite mild, while during 1909-1910, scarlet fever was of moderate severity. In our series of 100 cases the three deaths were caused by the following conditions: two by acute nephritis and one by general toxemia of scarlet fever.

During this work, the following were considered as contra-indications to the administration of vaccines:

1. Cases of continued fever. This condition is frequently a part of the scarlatinal infection. The typhoid type of scarlet fever comes under this category. Such cases are usually of poor vital resistance and vaccines are likely to do more harm than good. However, in selected cases, by means of small cautious doses, the local condition may be held in abeyance or even cured.

2. Acute nephritis. This condition means decreased elimination and retention of toxins. To administer vaccine means adding fuel to a fire. Such cases very frequently show increased activity of the local infection, indicating a general decrease in local and general resistance. It is a safe practice to wait for ten days or two weeks after the total disappearance of albumin from the urine before administering vaccine.

3. The occurrence of other infections means cessation of vaccine treatment. Thus, a patient may develop measles, chicken-pox, diphtheria, etc. Our work was once practically stopped on account of vaccination during a small-pox epidemic, during which time it was found unwise to whip up a well-worked horse.

TECHNIC

The technic employed was essentially that used by Wright and his co-workers. We never administer a mixed vaccine but isolate each organism and make up standardized vaccines from each. As short a time as possible was employed in securing isolation for fear that frequent subculturing would lower the virulence of the organism. It is also necessary to kill the culture at the minimum degree of temperature at the minimum length of time to secure the most potent vaccines. Briefly, it is as follows:

The ear is cleansed of the excess of secretion by means of probe and cotton and then a culture is made in sterile bouillon by means of a sterile swab. This culture is then plated out by inoculating the water of condensation in successive large tubes of plain or gelatin-agar. This water is run once over the surface of the media. In twenty-four hours the colonies are well developed and usually well isolated. They are examined microscopically and subcultures made on large tubes or bottles of slanted agar. If the streptococcus was being cultured, glucose-gelatin-agar was used. At the end of twenty-four hours, the culture is examined microscopically for purity and morphologic characteristics of the organisms; subcultures are made on various media, and in case a diphtheria-like bacillus is present, a toxin is prepared by growing for forty-eight hours in alkaline (0.5 per cent phenolphthalein) bouillon to which is added 1 per cent. glucose. This is administered unfiltered, subcutaneously into the abdominal wall of a 250-gm. guinea-pig, the dose being 0.5 per cent. of the body-weight expressed in cubic centimeters. The cultures are washed off the surface of the medium with sterile normal salt solution, diluted with the same solution and counted by comparing the number of bacteria with human blood as a standard. For staining these slides it is very essential that the stain employed produce no precipitate. We used, and can warmly endorse, the method consisting of fixation for five minutes in a saturated solution of bichlorid of mercury, followed by washing and immersion in a solution of carbol-thionin for a few minutes. After counting, the emulsion is sealed in a drawn out test tube and heated in a water bath, fully immersed, for one hour at 58 to 60 C., never over 60. The tubes are then opened and cultures made on slanted agar.

The tubes are then sealed again and put aside in the refrigerator for twenty-four hours to await the outcome of the cultures. Streptococcic vaccine is always allowed forty-eight to seventy-two hours in determining whether it be sterile, because this organism grows so slowly. If sterile, the tubes are opened and the proper dose prepared by diluting with sterile salt solution, with compound solution of cresol added as a preservative. The dose is put up in amounts of one cubic centimeter in sterile ampoules or in a sterile stock bottle. When not in use they are stored away in a cool place.

CONCLUSIONS

We have tentatively drawn the following conclusions:

1. The best time, all things considered, for commencing vaccine treatment in cases of otitis media, is from the eighth to the sixteenth day of the discharge.

2. Continued high fever, nephritis, toxemia and various intercurrent affections *are contra-indications to the administration of vaccines.*

3. Under vaccine treatment. three times as many *patients are cured within thirty days and permitted to* go home as under the usual treatment. This means that the average residence of a patient in the hospital has *been considerably decreased.*

4. In general, cases of otitis media offer a fruitful and encouraging field for the employment of vaccine therapy.

MULTIPLE MYELOMA WITH ALBUMOSURIA

REPORT OF A CASE

JOSEPH M. KING. M.D.

LOS ANGELES

The first recorded case of albumose in considerable amount in the urine with accompanying destructive lesion of bone was reported by Henry Bence-Jones[1] of London. before the Royal Society of London, in 1874.

The urine was from a male patient, a grocer, aged 45, who dated his illness from a violent strain in vaulting from a cavern, accompanied at the time by violent pain in the chest, and who. after sixteen months' illness, died. is case occurred in the practice of a Dr. MacIntire. he autopsy Bence-Jones remarked, "I saw that the structure of the ribs was cut with the greatest ease the bodies of the vertebræ were capable of being sliced off with a knife." Microscopically, their interior presented "granular matter, oil globules, nucleated cells. constituting the bulk of the mass—a few caudate cells and blood-disks extravasated largely among the other cells, and giving the red color to the gelatiniform mass."

The post-mortem diagnosis was "osteomalacia fragilis rubra."

But few cases were recognized and reported up to 1890. Since that time an increasing number of cases has been recognized, but the condition is still far from common.

A large number of names have been given to the condition, the one of multiple myeloma, now universally used, *having been given to it by* J. von Rustizky, in 1873,[2] who, however, regarded the condition as simply over-growth of the cell-elements of the bone-marrow.

It attacks the old rather than the young, occurring in males more often than females, and usually runs its course within two years. The condition is one of primary tumor formation taking place in the red marrow of the bones. It is. therefore, most apt to occur in the sternum. ribs. vertebræ, and skull, although the long bones are by no means exempt. It usually appears simultaneously in several foci, often in bones widely separated. The growth resembles a small round-celled or lymphosarcoma. but differs from it in very seldom forming metastases. only one or two cases being reported,[3] and in not containing spindle or giant-cells. It forms soft, reddish masses, with yellowish or grayish streaks, is homogeneous in appearance, not sharply defined from the surrounding tissue, and replaces the normal red bone-marrow. The cortex of the bone is also usually very much thinned and bulging or broken through, and the tumor forms nodular masses on the surface or may even invade the neighboring soft parts by continuity of growth. Spontaneous fractures not *infrequently* occur. If the vertebræ are involved, curvature of the spine or kyphosis frequently occurs, with its accompanying pressure symptoms. In pure cases the *affection* is confined to the bony system, no enlargement of the spleen or liver, or involvement of the lymph glands taking place. In a considerable number of the *reported* cases enlargement of the spleen or liver or both has been noted.

The blood is markedly affected, resembling grave forms of secondary anemia, or a pernicious anemia. Leukocytosis is not common.

The best descriptions of the histologic structure are those of Henry A. Christian,[4] W. G. MacCallum,[5] and James Homer Wright.[6]

The tumor masses are very cellular in type, with a scanty, loose, wide-meshed connective tissue stroma, usually composed of very fine fibrils, in which loosely lie round or oval cells, sometimes polygonal in shape and interspersed with numerous large and imperfectly defined blood-vessels. Often many red blood-cells are seen scattered among the cells. These tumor cells are from 8 to 12 microns in length by 4 to 10 microns in width. The cell outline may be sharp, but there is not often a definite cell-membrane. and the cells are made up of a very finely granular slightly basophilic protoplasm, in which lies a rather large round or oval vesicular nucleus, often eccentrically placed, having a definite *nuclear* membrane. Two or three nuclei, each of the vesicular type, are not uncommon. The nucleus contains a chromatin network with chromatin masses usually *peripherally* placed. It also contains a nucleolus. No specific granulations are found. Much discussion has arisen as to whether these cells more nearly resemble and *spring from the premyelocytes, or from the bone-marrow* plasma-cells. The best evidence at hand seems to indicate that they are of plasma-cell origin.

In 1901 Hamburger[7] developed the clinical manifestations of the condition.

The chief clinical features are attacks of pain referred to some portion of the osseous system. often with the formation later of visible or palpable tumors, cachexia, and the presence of Bence-Jones albumose in the urine. Frequently the patient's first complaint is of rheumatoid symptoms; and stiffness of the small joints, as of the hands, may develop. Dull pain over the hips, patella, or vertebral column is also noted among the early symptoms, or perhaps sharp pain over a rib or the chest is the initial symptom, or the first complaint is of a seeming lumbago or sciatica. These painful periods often alternate with periods of comparative comfort. but any unusual muscular exertion or contusion of affected parts is liable to call forth a return of the pain. While pain is a predominant feature in many cases, in others it is entirely absent. As the disease progresses, visible changes in the bones are apt to appear. Bending of the vertebral column is common. The sternum also sometimes bends, and tumors on the ribs, sternum, cranium or about the joints are often present. Fractures, spontaneous, or caused by very slight injury, sometimes occur. *In a considerable proportion of cases,* no bone changes are demonstrable clinically. The *x*-ray may be a very great aid. showing rarefaction and thinning of the cortex of the bones. particularly the ribs, where a wavy outline may be made out.

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[1] Bence-Jones, H.: Phil. Tr. Roy. Soc., London. 1848, Part i, 55.

[2] Von Rustizky, J.: Deutsch. Ztschr. f. Chir., 1873. iii, 162.

[3] Tschistowitsch, T., and Kolessnikoff, H.: Virchow's Arch. f. path. Anat., 1909. cxcvii. 112.

[4] Christian, H. A.: Tr. Assn. Am. Phys., 1907, xxii, 145; Boston Med. and Surg. Jour., 1908, clviii. No. 19, p. 617.

[5] MacCallum, W. G.: Jour. Exper. Med., 1901, vi, 53.

[6] Wright, James Homer: Tr. Assn. Am. Phys., 1900, xv, 137.

[7] Hamburger, L. P.: Bull. Johns Hopkins Hosp., 1901, xii, 38.

With the progression of the disease the patient loses flesh and strength; the general health suffers; the appetite is poor; nausea sometimes occurs; and an anemia of the secondary type develops, gradually passing to a most severe type. Leukocytosis is not common, although it has been reported in some instances. In typical cases the spleen, liver, and lymph-glands are not enlarged.

The most distinctive sign, however, is to be found in the urine, in the presence of the Bence-Jones body, which is virtually diagnostic. It is not invariably present, but the exceptions are rare. As a rule it occurs early and persists until the end, although there may be marked remissions, and the percentage usually varies considerably from time to time. The amount of urine is usually increased, averaging about 2,000 c.c. daily, often slightly cloudy, very pale in color, either neutral or very slightly acid, and with a specific gravity averaging from 1.004 to 1.012. On applying Heller's test a white ring forms, and as the contained albumose is also thrown down by the Esbach reagent, it is often mistaken for ordinary albumin. When heated, however, it is found to become cloudy at from 50 to 60 C. This turbidity can be made to disappear by the addition of acetic acid; or by further heating to the boiling point it disappears in great part, to precipitate again on cooling. The urine usually gives a strong biuret reaction. Casts are seldom seen. Owing to the increased amount of urine passed, thirst is a rather common symptom. Peptonuria of slight degree is an accompaniment of many disorders, but the presence of albumose in so large amount as to alter the usual reactions of the urine is practically found only in distinctive lesions of bone, and then only in that particular lesion termed multiple myeloma. The percentage present in the urine varies greatly, from 0.25 of 1 per cent to 6.90 per cent., which high amount was reached in Bence-Jones' famous case. Its origin is unknown, although Weber[8] and others regard the bone-marrow as the seat of its production. It is often accompanied in the urine by traces of albumin. No other changes are commonly present.

The heart sounds may be accompanied by hemic murmurs, and while the condition does not usually give rise to pathologic changes in its musculature, attacks of angina have been reported in several cases.

Chilly sensations, fever and sweats and slight jaundice occur in some cases, but they seem to be the accompaniments of the rapid destruction of blood and blood-forming tissue, and not to be in any sense distinctive of this condition. So also, and from the same causes, serous effusions may occur.

If no demonstrable lesion is found in the bones, the physical examination is usually negative.

The diagnosis may be difficult, particularly if the Bence-Jones body, which is almost diagnostic, is absent.

Weber[8] gives a careful differentiation. Osteomalacia differs by more often attacking women during the child-bearing period, affecting chiefly the bones of the pelvis and lower extremities, giving rise to great deformity and bending of the bones, but not so frequently to spontaneous fractures.

Caries of the spinal column gives a more distinctly angular kyphosis, the ribs are not likely to be simultaneously affected, and the anemia is seldom so marked.

The presence of obvious bone disease, a leukocytosis of any degree, or of albumose in the urine, serves to distinguish the condition from pernicious anemia. Furthermore, the superficial fat is not well preserved, nor is there a lemon-yellow cast to the skin. From nephritis it is distinguished by a sufficiently careful examination of the urine.

The prognosis is bad, the patients having died in all recorded cases, generally within two years, although one patient is reported as having lived seven years from the first symptoms.

Treatment seems unavailing. Arsenic and the *x*-rays have been used. Only symptomatic treatment seems to be of any value.

The following case, while not a pure case of myeloma, in that it had a considerable leukocytosis together with hyperplasia of the spleen and liver, is yet to be classed among those of this tumor.

History.—E. J. A., male, aged 60, married, born in Canada of English parentage, a liveryman by occupation, first consulted me July 12, 1910, complaining of great weakness with inability to stand on his feet, with numbness in his legs, shortness of breath on exertion, fulness of the stomach after eating, and somewhat frequent urination. He had a wife, son and daughter living and in good health. His father died at 69, after a nine weeks' sickness of "paralysis of the lower limbs." His mother died at 88. One brother died in babyhood, a sister died of typhoid at 28, and two sisters, aged, respectively, 63 and 58, were living and in good health.

The habits of the patient were excellent. He had never had any venereal diseases, used no tobacco and only very occasionally took a glass or two of beer. He had suffered from the diseases of childhood, and stated that he had had typhoid fever three times, the last twenty years previously. In 1898 he was laid up three months with lumbago and "nervous prostration," but had fully recovered, and had been in perfect health for years. He gave no history of malaria or injury in the splenic region or elsewhere. He had suffered from an indefinite stomach trouble for some time. In September, 1909, he contracted what he thought was a severe bronchitis, with much cough and expectoration, which lasted for about three months, and reduced the patient somewhat in weight and considerably in strength. He at length recovered, however, and about Christmas felt fairly well.

In January, 1910, a sharp pain came on at the costal margin on both sides, made worse by exertion, lifting, etc., but especially by raising the arms. This attack lasted about six weeks. From this the patient did not fully recover; he never regained his normal strength. He had no fever at any time. This weakness increased, and about May 1 a dull pain came in the back, with numbness in the legs and inability to stand. Shortness of breath on exertion appeared about the same time and gradually increased. He did not now have any sharp pain, his appetite became poorer and he had distress in the epigastrium after eating. He gradually lost weight and strength, but no other symptoms developed prior to my examination on July 12.

Examination.—This revealed a man about 5 feet 10 inches tall, weighing 140 pounds, of large frame and much emaciated. He looked anemic, and the mucous membranes were very pale. The superficial fat was not well retained; there was no yellowness of the sclera. No cervical pulsation was noted, but the femorals were throbbing. No enlarged glands were noted. The pulse was not rapid, was very regular, but collapsing in quality. No abnormality was noted in the lungs. The area of cardiac dulness was not increased; the apex-beat could not be seen or felt, and the sounds were very weak. No murmurs were heard. The patient was tender in the upper part of the abdomen, and on examination it was found that the liver was palpable for 1½ to 2 inches below the costal margin, and that the spleen extended to the level of the umbilicus and the left mammillary line. When the patient arose in bed he held the spine rigid, as he also did in bending. No error in alignment of the vertebræ or tenderness on percussion was present. The pupils reacted normally to light and accommodation. The knee-jerks were lost, and most of the other deep reflexes of the body were feeble. Romberg's symptom was not present. The

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8. Webster, F. P.: Am. Jour. Med. Sc., 1903, cxxvi, 644.

patient reeled and complained of pain in the back when walking. He was very weak. Temperature was normal. The patient had at this time no cough or expectoration. Tuberculin tests were negative.

The blood showed hemoglobin, 20 per cent. (Dare); reds, 1,284,000; whites, 19,000. Stained specimens showed some poikilocytosis. No megalocytes were present, although there was some anisocytosis. Most of the cells looked small. Many normoblasts and some megaloblasts were seen, the latter showing all degrees of polychromatophilia. Some were absolutely basophilic.

A differential count showed polynuclears 23.5 per cent., small lymphocytes 50 per cent., large lymphocytes and transitionals and large mononuclears 21.5 per cent., eosinophils 3 per cent., basophils 2 per cent. For each 100 white cells there were sixteen nucleated reds, thus giving 3,040 nucleated red cells per cubic millimeter. Of these about 75 per cent. were normoblasts and 25 per cent. megaloblasts.

Several careful examinations of the patient's blood were made at intervals, but no marked change from this description occurred.

It was noted that the patient was passing large amounts of urine, a symptom of which he had complained, and on measuring, it was found to amount to about 2,000 c.c. daily. This was usually slightly cloudy, very pale, for the first week or ten days of observation slightly greenish in color, later becoming pale yellow. Its specific gravity was always about 1,008. It was very slightly acid in reaction. No serum albumin or sugar was present. When heated to about 56 C., however, it became opaque with the formation of a flocculent precipitate. This could be dissolved by the addition of acetic acid; if heated to the boiling point, it almost cleared, to again become very cloudy on cooling. When measured with an Esbach albuminometer this albumose was found to amount to 2 gm. to the liter. This Bence-Jones body varied considerably in amount, but was never absent from the urine during the remaining life of the patient, usually from 1 to 2 gm. to the liter. The urine was also found to contain enormous amounts of indican, and as the taking of methylene blue or other drugs, which might cause the urine to become green, could be absolutely eliminated, the color was supposed to be caused by the excessive excretion of this substance. It also blackened the precipitate of albumose on boiling. After passing the urine through the centrifuge a few hyaline casts could usually be found. After the discovery of the Bence-Jones body a very careful examination of the patient's bones was made, but nothing whatever could be detected, except a slight tenderness on percussion over the lower part of the sternum.

This condition continued without much change, except ever-increasing weakness, until the patient's death on July 28, due to his extreme anemia.

Necropsy.—This was performed nine hours after death. It revealed an emaciated man, about 60 years of age, 5 feet 10 inches tall, weighing about 125 pounds. There was no livor of the dependent parts. The superficial fat was not well retained. The cutaneous surfaces were very pale, but not jaundiced. The muscles of the abdomen and thorax were apparently normal. The cut surfaces of the costal cartilages appeared much whiter than usual. The sternum proved very fragile, and was broken twice in the attempt to remove it. There were slight recent adhesions in the right pleural cavity, but no fluid. The left pleural cavity was normal, as were also the lungs, with the exception of some hypostatic congestion at the bases. When the lungs were raised out of the chest the ribs were noted to have a wavy surface, caused by masses varying the size of from a pea to that of an almond. These masses were present on practically every rib, and looked as though the cortex had been bulged out in spots. The cortex was not broken anywhere. The ribs were very fragile and easily broken, and the sternum and ribs were easily cut through, showing a wavy outline, with the cortex very much thinned, and the medullary portion made up of a soft, moist, dark red tissue. This was continuous throughout the sternum, but alternating in the ribs with areas of grayish marrow, into which the reddish tissue insensibly merged. Examination of the right femur showed it to be normal. The bodies of the vertebræ were not sawn through, nor was the skull-cap removed. The pericardium was normal. The heart was normal in size, with normal endocardium and valves. The myocardium, however, showed fatty degeneration.

The liver was much enlarged, reaching almost to the level of the umbilicus. The gall-bladder was distended and fixed by firm adhesions to the liver. It could be emptied into the bowel by gentle pressure. No stones were present.

The mesentery of the transverse colon was firmly adherent to the under surface of the liver. On section, the liver was softer and paler than normal.

The spleen, which was very soft, measured 8 by 5½ by 2¼ inches, and weighed about 3¼ pounds, and had the appearance of a leukemic spleen.

The small intestines seemed very much contracted. No abnormalities were noted in their walls, and no ulcerations were present. With the exception of fatty degenerative changes, all the other abdominal organs were normal. None of the lymph-glands of the body were enlarged.

A section of rib, examined by Dr. Stanley P. Black, revealed the histologic structure to be practically that described by Christian.

AN EMERGENCY CULTURE MEDIUM FOR USE IN PRACTICE

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In general practice there are repeated demands for a culture medium which is, at the same time, cheap and easily prepared from the materials at hand. This is especially true when the physician desires to grow bacteria for the preparation of bacterial vaccines. The usual culture media are expensive and difficult to obtain, the apparatus necessary for their preparation is extensive, and the technic of preparation is long and tedious. Therefore, the demand for a special emergency medium is great.

Bacteria grow on ordinary artificial media under unnatural conditions and their character is often quickly changed by the new ingredients of the media. Some species cannot be grown without special care; this is true of the pneumococcus, the streptococcus and the gonococcus. These cocci do not grow readily; it is difficult to keep them alive, and their virulence is often lost after two days' culture, unless they are surrounded by the nourishment afforded by human secretions. The problem is to supply them with conditions as nearly as possible like those which they find in the human subject.

I experimented for several years with agar-agar, Loeffler's blood-serum, bouillon, milk and potato, and noted the effects of various salts and chemicals in solution on the growth of bacteria. I also followed the experimental work done in the physiologic laboratories: the use of normal salt solution to preserve skin grafts; the work of Dr. Loeb at the University of Chicago with amebas in salt solution; the power of salt solution to preserve the life of the cells in the blood-vessels and heart of the frog, and finally the suspension of the leukocytes in normal saline solution in performing the various experiments in determining the opsonic index. These studies led me to think that normal salt solution might keep bacteria alive. I found that if sufficient material from the site of the infection were added to 2 drams of normal salt solution, in a sterile bottle or test-tube, and incubated at body temperature, many of the ordinary bacteria could be grown and kept alive for weeks and even months, and that in some strains the virulence seemed to be maintained longer than when grown on the ordinary media.

This method can be used to transfer culture material from the office of the general practitioner to his laboratory or to that of the laboratory specialist, and will be found of distinct advantage in transporting infectious material over long distances. All that is needed is a sterile bottle containing sterile, normal salt solution, in which is suspended some of the discharge from the point of infection, the discharge having been obtained under aseptic precautions. It is important to obtain a liberal amount of the material from the site of infection, in order to furnish the infecting bacteria with sufficient provender.

There are some exceptions among bacteria; some will not grow in salt solution, and doubtless others will be found. Pneumococci can be kept alive in it only a very short time, and are completely dissolved (autolyzed) in four days, as noted by Rosenow. Streptococci do not grow well unless serum from the site of the infection be added, but this can easily be done. Staphylococci, *Bacillus typhosus*, *Bacillus coli communis* and *Bacillus pyocyaneus* can be readily grown. The gonococcus can be grown in salt solution by the addition of a liberal supply of human blood to a free supply of secretion from the infecting area. Diphtheria bacilli grow with difficulty, but can be grown in salt solution by the addition of a few drops of human blood-serum or sterile beef bouillon.

It will be noted that all these materials may be obtained at home and with but little trouble and expense. The tubes of cultures thus obtained may be incubated on the person of the doctor or of the patient, care being taken to see that they are well stoppered by stoppers rendered sterile by boiling or steam sterilization.

I offer this preliminary report to those who are interested in bacteriologic work and especially to workers in vaccine therapy, as a ready assistance in such work, with the desire that it may save both time and expense.

34 Washington Street.

SYSTEMIC BLASTOMYCOSIS

REPORT OF A CASE

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During the last decade, blastomycosis cutis has become a well-recognized, distinct, clinical and pathologic entity among dermatologists. Although it is not a common disease, it appears to occur more frequently in this vicinity than it does elsewhere. More cases have been reported from Chicago than from any other one locality, and it is largely to the thorough work of our Chicago confrères that we are indebted for our present knowledge of the disease. Prior to the work of Gilchrist and Stokes in 1896, the disease was mistaken for various other conditions that resemble it in certain respects. The three diseases which have given rise to most difficulty in diagnosis are tuberculosis, syphilis and carcinoma. Blastomycosis resembles very closely the verrucous form of tuberculosis and often a definite diagnosis can only be arrived at after microscopic examination of the tissues or the pus. The lesions of blastomycosis resemble somewhat those of the rarer vegetating forms of syphilis, and if the diagnosis is not established by microscopic examination, the clearing of the lesions under potassium iodid may still further confuse the physician. The resemblance of the lesions to carcinoma is only very superficial and should lead to no difficulty if the history of the case is carefully gone into.

The organism which gives rise to this disease is a fungus much resembling yeast. It is very readily demonstrated in the pus from the lesions by treating the material with liquor potassæ and examining under the microscope with a fairly high power. The organisms resist the action of the alkali and are thus easily distinguished from epithelial cells and pus cells. They are round, oval or slightly irregular in outline and have a well-defined double-contoured homogeneous capsule. The protoplasm is finely or coarsely granular and is separated from the capsule by a clear space of varying width. Budding forms are seen in all stages. No mycelium has as yet been demonstrated in the pus from skin lesions or deeper abscesses, but it is seen in cultures. The organisms grow very readily on artificial media.

The typical skin lesion is so characteristic that to one familiar with the disease, the diagnosis, as a rule, presents very little difficulty. The lesions are elevated from the surface; each has a well-defined border and is covered with irregular papillary elevations, separated by clefts or fissures, giving the whole a verrucous appearance. Portions of the surface are covered by crusts. The border is the most characteristic feature. It slopes abruptly to the normal skin and on close inspection it is seen to be set with a large number of minute abscesses. The pus from these abscesses contains the blastomycetes in large numbers.

The first case of blastomycosis to be recognized was one of systemic infection with the organism reported by Busse and Buschke in 1894. Credit belongs to Gilchrist and Stokes, however, for first describing the typical cutaneous lesions and properly classifying the parasite. Since these reports, a hundred cases or more have been recorded and no doubt many hundreds of cases have been recognized and treated which have not found their way into medical literature.

Recently a number of cases of systemic infection with the organism of blastomycosis have been reported. There are now on record twenty-nine in all; reports of twenty-seven of these were collected and published in a very exhaustive article two years ago by Montgomery and Ormsby. Since that time, one case, the first from the South, has been reported from Memphis, Tennessee, by Fontaine, Haase and Mitchell; and another case has been recorded by Hutchins. To this list I wish to add still another which has recently come under my observation at the Milwaukee County Hospital and which I was able to follow and study with the assistance of Dr. L. M. Warfield.

REPORT OF CASE

The patient was a German laborer, aged 70, who had resided in this country thirty-seven years and had been an inmate of the Milwaukee County Almshouse for four and one-half years. He was first admitted to the County Hospital March 1, 1909, on account of a sore on his right elbow. There was nothing of importance in his past history; he had had typhoid fever, but denied any knowledge of venereal infection.

The present illness dated from three weeks before his admission to the hospital. After a slight trauma, a lesion developed on his elbow. On admission, this lesion was about the size of a silver dollar and presented a purulent granulating surface, with a well-defined margin and somewhat raised above the surrounding skin. This lesion was on the right arm, just over the internal condyle of the humerus. The tissues surrounding this ulcer were edematous. The patient also presented at this time (March 19, 1909) over the vertex of the skull a soft, well-defined mass about the size of a hickory-nut. This was incised and pus evacuated. This pus was not examined. The wound continued open till the time of the patient's death, and necrosis of the outer table of the skull extended until an area 2 inches in diameter was involved. These two lesions, from the subsequent history of the case, were probably blastomycotic, although no definite proof that such was the case could be obtained. The lesion on the elbow slowly healed under local treatment alone. A section, taken from its margin, showed only granulation tissue. The patient was sent back to the almshouse in August, 1909.

Three months later, he was again admitted to the hospital. At this time there were present three lesions, which, from their clinical appearance and the microscopic findings, were undoubtedly blastomycosis. The most typical of these was situated above and to the right of the upper lip and was about the size of a fifty-cent piece. It was raised above the surrounding skin and partly covered by crusts. Along the margins were many miliary abscesses. There was a larger lesion involving the left cheek, which was concealed by his beard. A third and much smaller lesion occupied the outer half of the right lower eyelid. His general condition at this time was fairly good, although his voice was hoarse and there was some cough and expectoration. Examination of the lungs revealed dulness and moist râles at the left apex. The lymphatic glands of the axilla and neck were enlarged.

The patient was put on increasing doses of potassium iodid, and for a time the local condition seemed to improve. In fact, the lesion on the right cheek disappeared, but promptly recurred.

After about a month in the hospital, the patient began to show evident signs of decline. He lost weight rapidly; his cough and hoarseness increased. In December, 1909, he developed an abscess at the right sternoclavicular articulation which was evacuated. The pus contained blastomycetes in large numbers. Another much larger abscess then appeared on the left elbow. The old lesion on the right elbow was, at this time, practically healed. In February, a retropharyngeal abscess developed and was evacuated. Repeated examinations of the sputum for tubercle bacilli and blastomycetes were negative.

During February and March, the patient continued to lose ground. He became bed-ridden, ran a septic temperature and finally died April 13.

Necropsy.—Unfortunately, a complete necropsy was not permitted but sufficient examination of the contents of the thorax and abdomen was allowed to establish the diagnosis of systemic blastomycosis.

At autopsy, which was performed by Dr. Warfield, the most striking lesions were found in the lungs. These organs were voluminous and dark purplish in color. The glands at the root were rather large, but not caseous. The lobes of the right lung were bound together by tags of adhesions but the pleura in general was not thickened. The cut surface of both lungs showed a grayish finely granular appearance and over it were scattered small nodules, one at the base of the right lung, being about 2 mm. in diameter. Similar nodules were found in the spleen and liver, giving the organs the appearance of being filled with miliary tubercles. This resemblance to tuberculosis is a very characteristic feature of the disease.

The microscopic appearance of the lesions in the lungs also closely resembled miliary tuberculosis. The sections showed miliary abscesses, surrounded by varying numbers of giant-cells. The necrotic centers of these abscesses, together with the giant-cells, contain many of the characteristic organisms of blastomycosis. Very similar lesions are also seen in the sections from the liver, and thus establish beyond a doubt the diagnosis of systemic blastomycosis.

One interesting feature of this case is the fact that although repeated and thorough search was made, the sputum never contained any of the organisms in spite of the very extensive involvement of the lungs and the presence of symptoms pointing to pulmonary involvement ante mortem.

In other respects, the case resembles very closely the majority of those thus far recorded. In all the cases in which an autopsy was done, thirteen in all, the lungs were found to be more or less extensively involved. In several cases the lung symptoms were the earliest noted.

This very general involvement of the lungs would suggest the possibility that the respiratory tract may have been the portal of entrance by which the organisms gained access to the body. The symptoms referable to the lungs, however, have been mild in nearly all the cases, especially during the early part of the disease. The physical findings have not pointed to extensive lung involvement except in a few of the cases toward the end. The symptoms have resembled closely those of tuberculosis, although usually less pronounced than in tuberculous changes of equal extent and severity. Blastomycetes have been demonstrated in the sputum in seven of the recorded cases.

Another common and very pronounced feature of all the cases has been the formation of multiple abscesses, resulting often in sinuses and chronic ulcers. Some have healed, leaving scars. These abscesses have varied in size from minute, almost microscopic lesions to cavities large enough to hold a liter of pus. The miliary abscesses have been found most commonly in the lungs and spleen. The larger ones may invade the joints and cause erosion and caries of the bones.

These larger abscesses may be divided for descriptive purposes into two groups, superficial and deep. The deeper abscesses are, as a rule, larger and have been recorded in the abdomen, thorax, in the psoas muscle, in the retropharyngeal tissue and about the kidney. There is one deep abscess on record from which a quart of pus was evacuated.

Accompanying the formation of multiple abscesses, there are the symptoms which are usual in chronic pyemia—irregular fever, malaise, loss of strength and emaciation.

One point of interest is that in spite of the fact that extensive suppuration has been present in all the cases, in only three has amyloid degeneration been recognized. Characteristic cutaneous lesions of blastomycosis have been present in nearly all of the cases. In a few, the superficial lesions have taken the form of abscesses and superficial ulcers.

The prognosis in cases of systemic blastomycosis is exceedingly unfavorable. Of the recorded cases, only four have recovered. The course of the disease is essentially chronic. Most of the cases have lasted from one to two and one-half years. Only six of the cases have terminated in less than six months. Death has resulted in most instances from gradual exhaustion, due to chronic suppuration or to general dissemination of the disease through the various organs and tissues of the body.

From this very unfavorable record of results, it may be assumed that the treatment of the disease is not very satisfactory. The only drug which appears to have any specific action on the disease is potassium iodid. The patients who have recovered have received it in large doses.

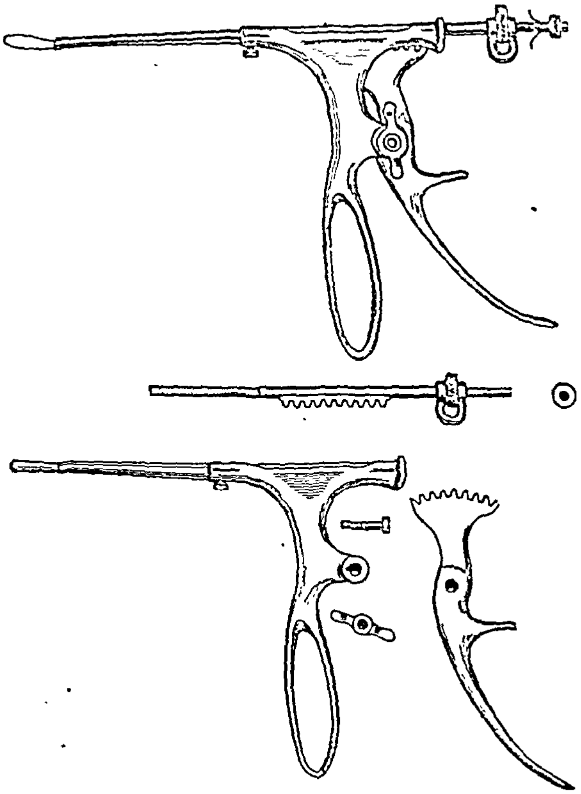
Locally, the lesions should be treated like those of the purely cutaneous form of the disease. One of the best local applications is 1 per cent. copper sulphate solution in conjunction with the use of the *x*-ray.

1242 Wells Building.

AN IMPROVED TONSIL SNARE

WILLIAM D. BLACK, M.D.
Ear, Nose and Throat Surgeon at Centenary, Osborne and City Hospitals
ST. LOUIS

The instrument and its various parts are so well shown in the illustrations that no further description is necessary. It is a more powerful instrument than the ordinary tonsil snare and does not get out of order like many others. It is simple in application, can be used a number of times without requiring a new wire, and, if properly adjusted, the wire cannot slip. It should be manipulated by a sort of forearm and wrist movement, instead of by the fingers, in closing it, so that the barrel will not be thrown out of line. It is made of solid brass with a heavy nickel coating. Number 7 or 8 piano wire should be used. I have used the instrument a number of times with excellent results. It is made by the O'Brien Worthen Co., Frisco Building, St. Louis.



W. Black's tonsil snare and its various parts.

220 Metropolitan Building.

A SIMPLE DROP METHOD OF GIVING RECTAL ENEMAS OF NORMAL SALINE SOLUTION

JOHN EGERTON CANNADAY, M.D.
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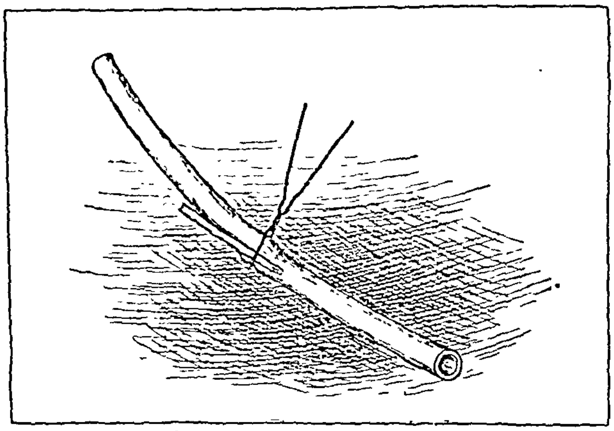
CHARLESTON, W. VA.

Nurses in hospitals often experience a good deal of trouble in giving patients normal salt solution by rectum. For various reasons it becomes intolerable to the bowel and is expelled. Sometimes the solution is too hot, sometimes too cold, but the most frequent trouble is that it is allowed to run into the rectum too rapidly. The reasons for this are as a rule, first, that the nurse has no efficient means of making it flow drop by drop, and secondly, that the douche bag or container is usually hung too high and the water pressure is too great. The container should be hung so that the solution is 8 or 10 inches above the level of the rectum. It should frequently be tested by a bath thermometer and the temperature kept about 100 F. A hot-water bottle on either side of the douche bag or the frequent addition of small quantities of hot saline solution will serve to keep the temperature up.

I have found that the most simple means of inducing the fluid to flow drop by drop is not a hemostat but a hairpin and a match. When the hemostat is clamped on the tube it invariably begins to cut into the rubber and probably five minutes after the solution has been flowing drop by drop it is running in a steady stream. A much better, simpler method, and one which will issue a steady drop by drop flow as long as is desired, is provided for as follows: An ordinary wire hairpin is passed about the rubber tubing so that one of its prongs extends on either side; the free ends are secured from spreading apart by a twist of the wire with the fingers. Three or four wooden toothpicks or a match trimmed down to a wedge-shaped point are induced between the wire hairpin and the rubber tube and gently pushed in until the flow is just as desired. As a rule it is not wise to attempt to give too much fluid at a time. I find that in the average case about 6 or 10 ounces every hour and a half or two hours will be sufficient and will be a little less than the patient will tolerate comfortably. In giving saline solution regularly over a space of more than twenty-four hours one will find that more is usually absorbed at first than later after the system has been saturated with fluid.



Method of regulating flow in rectal enema.

A soft rubber catheter in the rectum is better borne and causes much less irritation, as a rule, than a rigid nozzle. If this catheter is made after the type of the usual retention catheter or if it is secured in place by a strip of adhesive plaster passed across the buttocks the patient is saved from the annoyance of frequent introduction and removal.

Aside from the well-known value of saline solution by rectum in the treatment of shock, thirst and hemorrhage, it is perhaps of greater value still in the prevention of urinary irritation and suppression. Usually the operative patient is depleted of water by purgation and gets but little fluid for several hours prior to, during, and after operation. A considerable amount of toxic and highly irritant material is thrown undiluted on the kidneys and they may prove unequal to the strain. If these toxic bodies are highly diluted with water their elimination will be felt far less.

VENEREAL PROPHYLAXIS IN THE UNITED STATES NAVY

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Surgeon, U. S. Navy
CAVITE, P. I.

As the first requisites of a military or naval organization are health and efficiency, it is at once apparent that these two conditions must be maintained at the highest attainable point or disastrous results will ensue in time of war. The medical officers of the Navy are responsible for the physical condition of the personnel and it behooves them to safeguard this in every way possible.

One of the most recent steps toward this end is venereal prophylaxis, which is now in operation in the Navy, it having been officially adopted something over a year ago. Some of the naval medical officers, myself included, had recognized the value of the treatment, and were using it in some form or other, long before it was officially authorized. The method now used in the service is practically the same throughout, though there are, of course, slight variations, depending on the views of the several medical officers.

The treatment successfully employed at this station can be conveniently taken up and described under two heads, viz.: (1) preliminary instruction, and (2) application of the treatment.

PRELIMINARY INSTRUCTION

On reporting for duty at a naval station, or on board a ship, as soon as possible I begin a series of lectures to the men, which cover the entire subject of venereal disease. These lectures are couched in simple language, and the men are urged to ask questions, if they do not understand any part of the lectures. Particular stress is laid on the danger of neglecting or concealing real disease. Venereal prophylaxis is thoroughly ained to them, the excellent results obtained are ited, and they are urgently requested to cooperate with the medical officer in this important work. Most of them do so willingly, as the American bluejacket is very intelligent, and once he realizes that the treatment is for his well-being he cheerfully does his part. Of course there are a few "sea-lawyers" who consider the treatment a joke, or of no value, and these men are the principal sufferers, as, in addition to their greater liability to contract venereal disease, they are punished for not reporting for prophylactic treatment, or for concealing disease, as men of this class frequently do.

To be absolutely certain that no man escapes, each is furnished with a typewritten slip covering the salient points of the lectures and of venereal prophylaxis. At this station slips are made out in English, Spanish and Tagalog (the native language), as there are several hundred Filipinos enlisted in the native auxiliary force, and the majority of these men do not understand English. These notices are also posted in their sleeping-quarters, and in the navy yard boat office where they are on duty.

These lectures are repeated from time to time, as the personnel of the ship or station is constantly changing and many of the new recruits have had no instruction in venereal prophylaxis.

APPLICATION OF THE TREATMENT

At all naval stations, and when a ship is in port, a certain number of men are allowed shore leave every day. This leave is generally from about two o'clock in the afternoon, until seven or eight the next morning. A list of their names is kept and they are checked off when they go, and when they return from shore leave. The medical officer is furnished with a copy of this list every day when the men go ashore. As soon as a man returns from shore he is ordered to report at once to the sick-bay for prophylactic treatment. On reporting there his penis is examined, and he is interrogated as to whether or not he indulged in sexual intercourse while on leave. If he replies in the negative, he is excused from treatment, but if subsequently a venereal infection develops, he is punished for lying. It would be well to state here that all examinations are, if possible, conducted in private so as to spare the feelings of the man examined. If the man states that he had sexual intercourse on shore, he is given the following treatment:

The entire penis is scrubbed with liquid soap and water for several minutes, and then washed well with a solution of mercuric bichlorid 1 to 2000 in strength. If there are any abrasions present they are sprayed with hydrogen peroxid from a hand atomizer. The man is then placed in a sitting position, well forward in a chair in front of a convenient receptacle, and given two injections of a 10 per cent. solution of argyrol. He is required to retain each injection in the urethra for five minutes. After taking the injections, the entire penis is thoroughly anointed with a 33 per cent. calomel ointment. He is told not to urinate for at least two hours and to allow the ointment to remain on the penis for some hours. A temporary dressing is now put on the penis to protect his clothes and he is excused.

RESULTS OF TREATMENT

The results attending prophylactic treatment at this station have been most gratifying, in spite of the fact that at Cavite, unlike all other naval stations, no regular checking list is kept of men on leave, and there is no means of insuring prompt reporting, after return from shore leave. Before venereal prophylaxis was instituted here, the percentage of venereal diseases of all classes among the men averaged from 25 per cent. to 30 per cent. annually, and at times was even higher, as Cavite and vicinity are notorious for venereal diseases, especially syphilis and gonorrhea. The percentage of gonorrhea has been reduced to 8 per cent. annually, and this percentage includes about thirty patients that did not report for treatment. Chancroid was reduced from 5 per cent. to 2 per cent., which includes two patients not reporting for treatment. Syphilis has been reduced from about twenty cases annually, to one case for the entire year 1910, and this patient did not report for prophylactic treatment. These results speak for themselves, and show the efficacy of the treatment, if properly and conscientiously given.

CONCLUSIONS

After an experience of several years, it has been found that if men report for treatment within twelve hours after contact, the danger of contracting venereal disease is practically *nil*. After twelve hours, the treatment fails in many cases. It appears to be of special value in syphilitic contacts. I believe it to be an absolute preventive if employed early. The treatment, to succeed, must be given early and thoroughly. My percentages of failure of treatment have never been over 2 per cent. of cases and sometimes there are no failures for months at a time. The best drug for injections is argyrol, as it is non-irritating, and in my experience a more efficient germicide than any other drug used in the prevention of gonorrhea. I have tried protargol, but to be effective, it must be used in a 2 per cent. solution, which in many cases causes urethral pain and discomfort for some hours after taking the treatment, and this tends to keep many men from reporting, except under protest, as they would rather run the risk of infection than suffer the discomfort often caused by the injection of protargol. It is believed that if all contacts reported for treatment within twelve hours, venereal disease would soon be a negligible quantity in the service.

It would seem that venereal prophylaxis could be advantageously employed in civil practice, if physicians in civil life would impress its value on their patients. This would take time, but a few concrete examples in each locality would have a far-reaching effect, and the laity would, in my opinion, eventually see the value of this treatment and act accordingly.

SOME ETIOLOGIC FACTORS AND TREATMENT OF FURUNCULOSIS

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PHILADELPHIA

As the general practitioner is frequently called on to treat cases of furunculosis, he realizes that the march of progress in treatment has advanced along more scientific lines, and many are now using the serum therapy, which has been greatly modified, simplified and perfected since Wright wrote his first article advocating the use of staphylococcus vaccines in the treatment of this disease. They realize that it is not necessary either to allow it to run its course or to try every drug recommended by the dermatologist or therapeutist. In former years, it was common practice for the physician to prescribe "blood tonics," sulphur in large and nauseating doses, calx sulphurata or even to substitute baked egg shells for that preparation.

Ichthyol is often used externally in treatment of this condition, but its efficacy has never been proved and patients justly object to its use as it is extremely dirty and foul-smelling.

The average case of furunculosis, under proper antiseptic precautions against further crops, will cure itself in from one to four months, but many factors enter into the causation of the disease, and one should inquire carefully into the patient's habits, occupation and mode of living; of first importance must be considered an existing diabetes, nephritis or transitory albuminuria. Disorders of the gastro-intestinal tract play an important part in the etiology, as does excessive sweating, friction, lack of, or even excessive use of soap and water. Men who work in paraffin or bar metal workers and those who are thrown in close contact with potassium permanganate, potassium iodid and the bromids are frequently affected.

When single the lesions are usually due to some local injury as blows, friction or from pressure exerted, shown by those who have a sedentary occupation, as tailors, who often have a succession of single or multiple boils on the buttocks. Boils frequently follow various eruptive fevers, especially variola, septicemia, pyemia, sewer-gas poisoning and may occur as complications of certain skin diseases—scabies, eczema, etc. Severe strain and mental worry which lower the vitality must also be considered. Pressure of the collar button may cause a furuncle. In some men, if the back of the neck is shaved when the hair is cut, a crop of small boils will always ensue; this is undoubtedly due to the loss of the protection the hair normally affords, and as there are always present on the skin numbers of staphylococci, the collar rubs them directly into the mouths of the hair follicles, and sebaceous glands and pustules result.

A large number of so-called blood purifiers and blood tonics depend on potassium iodid for the effect, and as this drug frequently produces a pustular eruption, their use naturally is often disastrous.

The pain is out of proportion to the size of the lesion, is worse at night and is of a burning, throbbing character which can only be relieved by evacuation of the pus, leaving an indurated nodule, very tender and frequently accompanied by intense itching.

TREATMENT

First and always the urine should be carefully examined for albumin and sugar and the patient warned against any habits or occupations that might have an influence on the condition.

For furunculosis not caused by any constitutional condition, I have found the following line of treatment of great service in a long series of cases: The end of a wooden applicator is sharpened to a fine point, wrapped with a small piece of raw cotton and dipped into pure phenol. Many men prefer the use of the knife, but the "phenol stick" accomplishes the purpose; being slightly anesthetic, it is much less painful and the resulting scar is smaller, which is an important factor should the condition occur on the face. The phenol stick is inserted carefully where pointing occurs, held for a few seconds to allow the phenol to produce its anesthetic effects and then very gently pushed into the cavity. Extreme caution is used not to go beyond any resistance or the protecting barrier that has been formed to limit the process will be broken down or a blood-vessel punctured. After an opening has been made sufficiently large to permit of drainage the following ointment is applied:

℞

Acidi salicylici ....|	gr. xl vel lxxx
Petrolati ....|	℥i

Sig. Apply twice daily.

At the same time the first injection of staphylococcus vaccine should be given—100,000 to 1 c.c.; at the expiration of four days the second injection of 250,000, in one week more 1,000,000 and again in another week the same dose. In extreme cases, the succeeding doses may be one billion to 1 c.c., but this is rarely necessary. The injections are given into the loose cellular tissue between the scapulæ and better results can be obtained if a dry cup is applied for five minutes before each injection. It will be noticed that the swelling at the point of injection is much more quickly absorbed by this method through the increased amount of blood brought to the part. This also has the effect of preventing, to a great extent, the discomfort that usually occurs after the first injection, as there is some headache, a feeling of lassitude and a slight rise in temperature, rarely above 100 F. These symptoms do not occur after the second and subsequent injections, as a rule.

The question of autogenous versus stock vaccines is a mooted one. I have always used the latter, and my knowledge of the former is only derived from cases reported by other dermatologists. Very few men have either the time, facility or laboratory training to make their own vaccines. If they are obtaining better results than those who choose the easier, quicker and to my mind, the safer way, their reports do not show it. In the past year I have seen three cases in which unpleasant, if not worse effects have resulted. In two, a marked cellulitis occurred, in one case the swelling was opened on a diagnosis of abscess, but no pus was found. In another case, after five injections of autogenous vaccine a carbuncle occurred and was treated surgically.

By referring to the histories of patients both in private practice and at the dermatologic department of the Jefferson College Hospital, I found a long series of cases that have been treated as outlined in the preceding—opened with the "phenol stick," dressed with salicylic acid ointment and staphylococcus polyvalent stock vaccine injected. A few histories follow.

Case 1.—A. B., dentist, aged 32, was in good general health, except for furunculosis, and the urine showed nothing abnormal. One and a half years ago he infected his finger while working on a patient. In the course of fifteen months he had between twenty-five and thirty furuncles in different parts of the body, some almost carbuncular, all of which were opened by the knife and dressed, but no other treatment was given for the first six months. At the expiration of this time he was given autogenous vaccine, four injections during one month, with little improvement and in a few days after the fifth injection a carbuncle formed and was freely excised, leaving a large scar. He stopped this line of treatment and continued to have one boil after another until three months ago when I advised the above treatment. After the first injection he noticed a temperature of 99.6 F. and some discomfort. After the second injection of 250,000, marked improvement was noticed in the degree of induration and in the absorption. The dose was rapidly increased to one billion to 1 c.c., repeated twice, and then dropped to one million and the man is now apparently perfectly well. In all, he was given fourteen injections, the largest number I have ever given to one patient.

Case 2.—T. P. B., male, aged 64, a merchant, was first treated for eczema of the face and neck. Urine showed no albumin at that time. When this condition had been cured der local and internal treatment, the latter being directed inst constipation, the patient developed three boils on the ck of the neck and the urine showed a trace of albumin but no casts then or later. The furuncles were opened with the "phenol stick" but no vaccine given until a felon appeared on the index finger of the right hand. This was opened with the knife and the first injection given the same day. Subsequent to the second injection, four days later, the improvement was very apparent, and after a total of six injections, the last four of one million to 1 c.c., the condition was cured and there has been no recurrence.

Case 3.—E. M. K., aged 27, salesman, had had four or five furuncles on the back of the neck during the preceding three or four weeks and he noticed that they started just after his neck had been shaved. The treatment consisted in opening with phenol stick, application of salicylic acid ointment and six injections of staphylococcus vaccine. The man has had no further trouble.

Case 4.—R. V., aged 30, female, for several months had been having a series of boils on both forearms. Urine examination was negative. This patient was treated as were all the others and required only four injections to effect a cure.

In addition to the four cases mentioned I have the records of forty-six others that differ only in the variation of the situation and the severity of the condition. The patients all received the same treatment, the number of injections varying from four to eight and in each case a cure was effected.

In none of these cases has the index been recorded at any time during the course of the disease, the treatment being guided entirely by the clinical manifestations. This may not be a strictly scientific means of procedure, but it is what the busy general practitioner must do and he is handling a remedy from which the risk is very remote.

CONCLUSIONS

Furunculosis showing no causative factor in any kidney complication can be successfully treated by being opened with a sharpened cotton applicator dipped in phenol, with injections of polyvalent staphylococcus vaccines and by applications of salicylic acid ointment from 5 to 15 per cent. strength.

The inability of the physician to prepare autogenous vaccines on account of lack of time, laboratory facilities and experience makes the stock vaccines prepared by reliable firms a much more desirable method of procedure in the average case.

The pain on opening a furuncle is much less than with the knife as phenol is slightly anesthetic.

The reaction is very slight after the first injection and is lessened by use of the dry cup.

It is not necessary to record the index, the dose may be regulated by the clinical manifestations.

2030 Chestnut Street.

AN EPIDEMIC OF TYPHOID FEVER WITH ISOLATION OF B. TYPHOSUS AND B. COLI FROM THE WATER-SUPPLY

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INDIANAPOLIS

During April and May, 1910, an extensive epidemic of typhoid fever occurred among the inmates and officers of the Indiana Reform School for Boys at Plainfield. There were slightly less than 700 boys in the school at the time the epidemic occurred and ninety-one of them had typhoid fever. Nine other cases occurred in the families of the officers of the school. At least two persons who visited the institution at about the time the first case was reported are known to have developed the disease within three weeks after their visit. Among the 102 cases there were only two deaths, both deaths of boys who were members of the school.

Dr. Ernest Cooper, attending physician to the school, very kindly furnished me with a list of all the patients, with the date of onset of the disease in each case. The first patient, the superintendent's stenographer, was taken ill April 9. The second case appeared April 15 and the third on the eighteenth. From April 20 to May 11, one or more cases were reported every day, with the exception of April 25. The maximum was reached on April 29, when twelve new cases were received into the hospital. The next highest number for one day was eight cases on May 3. After May 11 the number fluctuated, but averaged about one case a day until May 24, when the last one came to the hospital. The number of cases received each day is shown in Chart 1.

The boys in the school are divided into twelve companies. Each company occupies a separate building, which is used as school-room and dormitory. All the inmates of the institution eat in a common dining-room, except the members of Company 12. The food of these boys is prepared in the common kitchen and is carried to the dining-room in the company's building. The boys are given milk two or three times a week.

Each boy spends a certain number of hours every day in school; the remainder of the time he works at whatever task he is detailed to do. Cases of typhoid occurred in every company, Companies 1, 2 and 6 being most affected, Company 10 least so. The number of cases in each company is shown in Table 1.

TABLE 1.—SHOWING NUMBER OF CASES OF TYPHOID FEVER AMONG MEMBERS OF EACH COMPANY

Company	Case No.	Company	Case No.
1	12	9	4
2	12	10	2
3	6	11	8
4	3	12	9
5	5	Officers and their families	9
6	12	Visitors	2
7	9		
8	8	Total	102

A sanitary survey of the institution was made May 2. The general situation was first examined and three important facts discovered, viz.: 1. Cases of typhoid fever occurred in the families of the officers of the school as well as among the boys. 2. The only things which the boys and the officers' families used in common were milk, and water from a spring, always designated as the "Big Spring," which was the main source of drinking-water for the entire institution. 3. It was also found that cases occurred in every company in the school, but that Company 10 had escaped with only two cases. On further inquiry it was learned that the boys of Company 10 used milk from the same source as the other companies, but obtained distilled water from the ice-plant for drinking-purposes. The two typhoid patients from this company, on being questioned, stated that they had been working away from their own company and had drunk water from various sources, including the Big Spring.

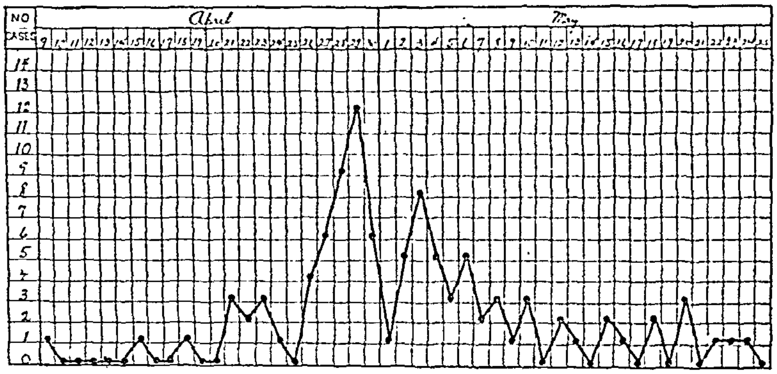

Chart 1.—Curve showing the occurrence of the cases during the epidemic.

Sanitary conditions in the dairy barn, milk-house, kitchen, bakery and ice-plant were found to be excellent. In the basement of each company building there are a number of shower baths, the water coming from a large open concrete reservoir. The water of this reservoir comes from two sources: at least one-half flows through a narrow chute from a pond or small lake which is fed by numerous springs; the remainder is pumped from a creek nearly half a mile distant. The pumping station on the creek was located, at this time, about one hundred yards below the outlet from a septic tank into which the sewage from eleven buildings was conducted. Later, the outlet from the septic tank was changed so as to empty into the creek several hundred yards below the pumping station. Water from the reservoir was examined bacteriologically a number of times. On May 2, when the creek was high as the result of a recent rain, the water in the reservoir yielded 30 per cent. gas in dextrose broth. At no other time did it yield more than 15 per cent., and once it yielded none.

The water-supply of the institution had for years come from a number of natural springs. Less than two years before the epidemic occurred the largest of these springs, always designated as the Big Spring, had been followed for some distance toward its head to the end of a series of jointed tiles put in position years before. From the end of the line of tile an iron pipe was laid to the former outlet of the spring (Chart 2). This pipe passed immediately beneath the toilet and sewer connection of the building occupied by Company 11, but all joints were carefully leaded and there was probably no leakage.

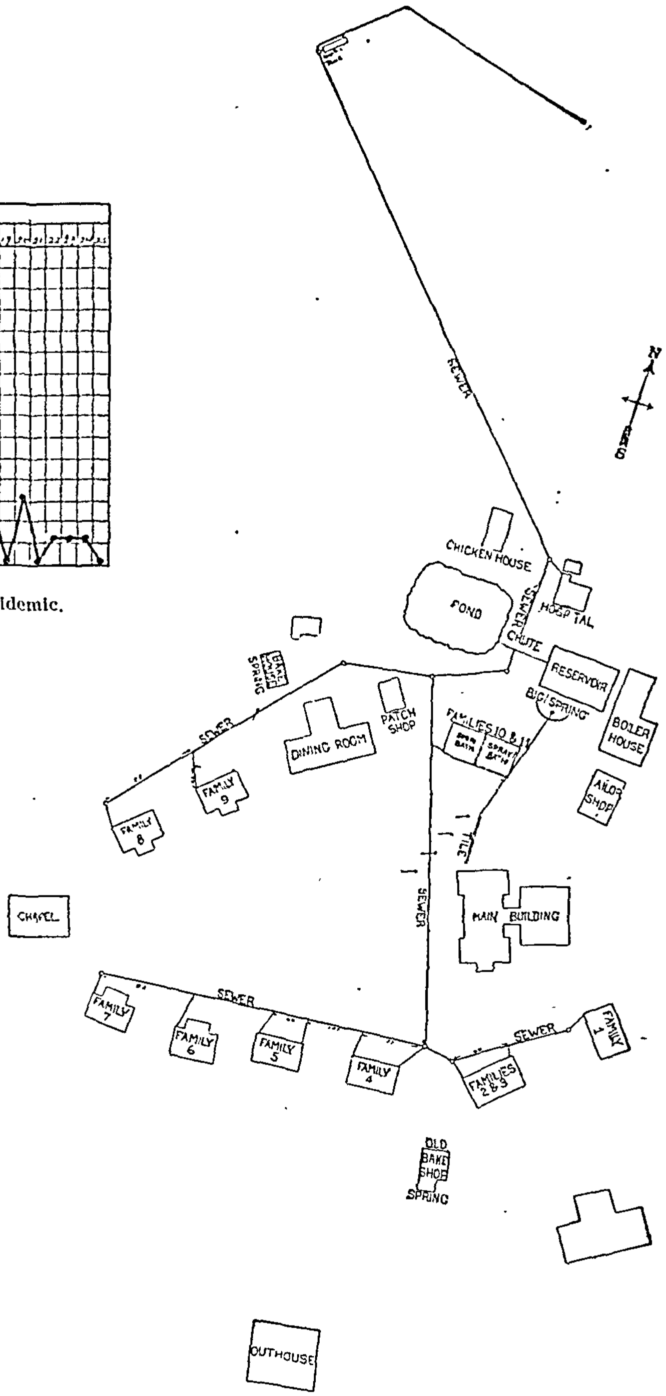

Chart 2.—Plan of the institution grounds, showing the location of buildings, dormitories, sources of water-supply, sewer system, etc.

In addition to this Big Spring, there was another in the basement of the bake-house which furnished water for cooling the milk and much of that used in the bakery, and in the dining-room and kitchen. A third spring, known as the Old Bake-shop Spring, half of the grounds and was not used except when some of the boys in near-by company buildings surreptitiously got water there to avoid carrying it the greater distance from the Big Spring.

The main sewer-line of the institution runs northward near the center of the grounds. The Bake-House Spring is west of the main sewer-line, the side from which the flow in the spring comes. A branch sewer, however, runs just south of it and in a position which favors contamination. The Old Bake-House Spring is south of the whole system of sewers. The tile which conducts the water of the Big Spring runs nearly parallel to the main sewer-line at approximately the same depth and within 15 or 20 feet of it. The upper end of the tile is probably somewhat nearer the sewer. After the Big Spring had been virtually proved to be the source of the infection, it was learned that when the sewer was laid nine years before, the engineers had great difficulty for a distance of 50 or 60 feet on account of the abundance of water in the sand in which the sewer was placed. This 50 or 60 feet was exactly opposite where the tile pipe of the Big Spring now is and the flow of water in the sand was noted to be toward this spring. The sewer was made of 12-inch salt-glazed tile, the joints of which were cemented. It is quite evident, then, that the water flowing from the Big Spring percolated around the main sewer of the institution, and that this condition of affairs had existed for nine years without any untoward results.

About March 15, the sewers were flushed out for the first time in several months, and considerable force was used. This was about three weeks before the first case of typhoid occurred.

A systematic bacteriologic examination of all the water used at the institution was undertaken. The results of the fermentation tests are shown in Table 2.

ABLE 2.—SHOWING RESULTS OF FERMENTATION TESTS *

Source of Sample	Percentage of Gas from Samples on Different Days									
	4/29	5/2	5/7	5/9	5/10	5/11	5/20	5/20	5/20	5/21
Big Spring	0	25	0	30	0	15	0	0	0	42
Pond	0	18	..	..	..	..	..	..	..	..
Reservoir	0	30	15	..	..	..	..	..	..	..
Bake-House Spring	0	0	10	..	..	..	..	..	..	..
Inlet to reservoir (creek water)		15	12	..	..	..	..	..	..	..
Old Bake-House Spring		..	30	..	..	..	..	..	..	..
Old tunnel		..	..	..	..	..	2	0	0	30

* Water from the "old tunnel" is from the same original source as that in the "Big Spring." The sewers were flushed out on the mornings of May 2, 10 and 20; the samples were taken in the late afternoon of May 2 and 10. Those examined on May 20 were taken at 6 a. m., 12 m. and 6 p. m., respectively, and on May 21 at 6 a. m. The spaces left blank *indicate that no specimen* was taken from that source on that date.

April 29, a sample of water from the Big Spring gave no gas when inoculated into sugar broth. On the morning of May 2, the sewers were flushed out. A sample of water taken late in the afternoon of that day gave a very suspicious gas test. Samples taken on May 20, yielded no gas. On that day the sewers were again flushed and a sample taken at 6 a. m., May 21, gave 42 per cent. gas.

No attempt was made to make accurate bacteriologic counts after the first examination. Each specimen was first plated on malachite-green agar. The forty-eight-hour growth on this media was washed off with sterile salt solution and suitable dilutions plated on Endo's medium. May 2 and 21, red colonies, which were proved by cultural tests to be *B. coli*, were isolated from the water of the Big Spring. May 2, an organism having all the cultural characteristics of *B. typhosus* and agglutinating with serum from one of the patients in a dilution of 1 to 50, was also isolated from the same source. This patient's serum gave a strongly positive agglutination test with a known culture of typhoid bacillus.

April 21, the boys were warned not to drink water from the Big Spring. How thoroughly this warning was obeyed is not known. About May 5, the Big Spring was sealed up so that no water could be obtained from it and the epidemic began at once to subside, the last patient entering the hospital May 24. The water-supply of the institution is now obtained from deep driven wells.

This investigation is interesting for the following reasons:

1. The close relation which had existed between the main sewer line and the chief water-supply of the institution for nine years without untoward results.
2. The evident relation between the flushing of the sewers and the amount of contamination in the water of the Big Spring.
3. The actual isolation of *B. coli* and *B. typhosus* from the water of this spring. The isolation of the latter organism from water is dependent largely either on luck or on an unusually heavy contamination. It was probably a combination of the two factors that brought success in this instance.

A RATIONAL INDICATION FOR BACTERIAL VACCINE IN TYPHOID FEVER

WITH A REPORT OF FOURTEEN CASES

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In the introduction to the study of infectious diseases. under the heading "Fever," Osler's "Modern Medicine" (Volume 2) says:

> The fever type is clearly associated, also, with the production of specific antimicrobic substances. In recurrent fever, the fall in temperature has been shown by Gabritschewski to be associated with the appearance of antibacterial substances that check the development of the spirilla; as these substances diminish, a new attack sets in. There is reason to believe that the fall of temperature with the crisis in pneumonia depends upon the somewhat sudden development of pneumococcidal and other reactions, because the pneumococci disappear, as a rule, from the circulating blood as crisis comes on.

This is quoted merely because it expresses broadly the general principle, which it is the purpose of this article to limit to typhoid fever, as the basis of a rational justification of vaccine therapy in this disease.

To go one step further, I may say that recovery from any infectious disease depends on two factors—the destruction of the causative organisms present in the body, and the elimination or neutralization of the toxins produced by them. With this as a working basis, a typical case of typhoid fever in a non-immune may be considered from its onset to a favorable termination with reference to these two factors alone, ignoring the well-known pathologic anatomy. Every non-immune or normal person must possess cell-receptors capable of combination with typhoid toxin, in order to present the typical symptoms of the disease. He must also possess either opsonin capable of actuating phagocytosis of the typhoid bacillus, or a bacteriolysin or agglutinin capable of accomplishing its destruction. In other words, a man who presents toxic symptoms as a result of typhoid infection, has killed enough bacilli to liberate their endotoxin. Let us follow this process.

Our subject secures a good dose of virulent typhoid bacilli. The first thing that happens is the destruction of a few of these organisms by the natural bacteriolytic forces, possessed by all individuals, with the liberation of their endotoxin. To this endotoxin the body reacts, producing a rise in temperature—very slight at first, because the dose of toxin liberated is small, on account of the feeble bacteriolytic power of the body. This toxin, besides causing a febrile reaction, excites the formation of a specific antibody to it and an antitoxin is produced, which, as it "fixes" the toxin present, causes a subsidence of the fever. If all of the bacilli of the initial infection were killed in one lot, our case of typhoid would end here. Unfortunately this does not occur. The infecting dose of organisms being more than the feeble natural defenses of the body can handle, they multiply rapidly, and if, on the other hand, body defenses were exhausted with the killing of the first lot and not reproduced, their rapid increase would result in mechanically obstructing the circulation. Fortunately, however, this also does not occur; for, besides the liberation of the endotoxin from within the cell capsules of the destroyed bacilli, substances exciting the production of both agglutinin and bacteriolysin are also liberated and the body is thus enabled to reproduce its antibacterial forces and attack the descendants of the unkilled bacilli of the initial infecting dose. The gradually rising temperature in the first week, then, may be said to be due to increasing doses of typhoid endotoxin liberated as the result of the destruction of increasing numbers of bacilli, by an ever-increasing bacteriolytic agent.

During the second week the condition reaches nearly a balance; that is, the production of antitoxin occurs nearly as rapidly as the toxin is liberated, but just enough later, or in insufficient quantity, so that the temperature remains practically uniformly high, on account of the abundance of bacteria from which the toxin is derived. During the third week, however, the bacteriolytic forces, which have constantly been added to, begin to assert themselves, and, either on account of their increased power, or a diminution in the virulence of the organism, the available supply of bacteria for the liberation of toxin diminishes. The doses of toxin then, after each bactericidal onslaught, are not so large nor so rapidly produced, in consequence of which, antitoxic action becomes more apparent. A dose of toxin produces a febrile reaction, which disappears as the toxin is neutralized; the temperature rises and then falls before another dose of toxin is produced to repeat the reaction; a remittent temperature results in which the reactionary rises have a tendency to become progressively less pronounced and the periods of remission progressively longer. The temperature therefore falls by lysis.

It will thus be seen that, during the third week, bacterial aggressiveness may be, figuratively, placed in one pan of a balance and the body defenses, consisting of bacteriolysin, agglutinin and antitoxin, in the other, the remittent temperature registering the tilting of the balance arm. The destruction of a group of bacilli and the liberation of their toxin are indicated by a rise in temperature, and the antitoxic action by a fall.

If the above paragraphs may be considered as detailing the toxin-antitoxin strife as it occurs, it is obvious that the introduction of any factor which would increase antitoxin formation would minimize the toxic symptoms of the disease; while the introduction of any factor which would increase bacteriolysis or agglutination would hasten its subsidence. Both of these conditions are fulfilled when dead typhoid bacilli are introduced into the body, in that the endotoxin is supplied without the necessary destruction of bacilli by the body, and the antitoxin, the formation of which it excites, produced in excess of that needed to neutralize it, becomes available to act on toxin produced from bacteria killed within the body; also the bacteriolysins and agglutinins, whose formation the dead bacilli have excited, are ready to act at once on living bacilli in the tissues.

That this does occur when antityphoid vaccine is used prophylactically is experimentally proved; and that the use of bacterial vaccine in clinical typhoid will start a prevailing tilt of the balance in favor of recovery, from the observation of several cases I cannot help but believe. In fact, as the cases herewith reported show, the duration of fever in the majority was below the average, while the average in all cases was materially reduced. In no case in which vaccine was administered did untoward symptoms follow, aside from the expected reactionary temperature rise; and even in cases not showing a decided result, the patients professed to feel stronger and better, and even asked that the dose be repeated.

A brief outline of fourteen cases of typhoid occurring in 1910, in which the vaccine was used therapeutically, after a positive diagnosis, is as follows:

Case 1.—The patient was admitted August 9; Widal positive August 21; patient inoculated August 26 with 500,000,000 bacteria; no reaction after inoculation. Temperature fell to normal within seventy-two hours; remained normal forty-eight hours; then the patient had a typical relapse lasting three days. The fever including relapse lasted eighteen days. Recovery ensued.

Case 2.—The patient was admitted August 11; Widal positive August 21; patient inoculated August 26 with 500,000,000 bacteria. The inoculation was followed by a sharp rise in temperature to 104.5 F. which responded to an ice bath. Thirty-six hours later it reached normal and remained there. This patient was severely prostrated; was in coma-vigil when inoculated. The symptoms abated as rapidly as the fever and in three days the patient was begging for beefsteak. The fever lasted nineteen days. The patient recovered.

Case 3.—The patient was admitted August 14; Widal positive August 23; patient inoculated August 26 with 500,000,000 bacteria, and again on September 6 with 1,000,000,000 bacteria. The patient was all but abandoned as hopeless on two occasions following prodigious intestinal hemorrhages. There was no temperature reaction following either inoculation, but a decided clearing of the mental haze was apparent. The total duration of fever was thirty-two days. Recovery ensued.

Case 4.—The patient was admitted August 15; Widal positive August 22. The patient was inoculated August 26 with 500,000,000 bacteria. The patient appeared moribund at time of inoculation; could not be roused and could not swallow nourishment. Urine and feces were evacuated involuntarily; very slight reaction followed injection. Within seventy-two hours the temperature was normal and a most startling improvement in every way was apparent. A second rise of temperature lasting forty-eight hours, after three days of normal temperature, was found to be due to an otitis media; paracentesis relieved it almost immediately. There were fourteen days of fever, exclusive of that due to otitis. The patient recovered.

Case 5.—The patient was admitted August 15; Widal positive September 1; patient inoculated September 12 with 500,000,000 bacteria. This was a very mild case and several Widals were necessary to diagnose typhoid fever as complicating an acute bronchitis, which was present. Convalescence was well established when the patient was suddenly seized with a coughing fit and died in an hour of cerebral embolism.

Case 6.—The patient was admitted August 17; Widal positive August 23; patient inoculated September 6 with 500,000,000 bacteria, and again September 16 with 1,000,000,000 bacteria. No marked reaction followed either dose, though marked symptomatic improvement was apparent after each. After thirty days of fever the temperature fell to normal, remained so for two days, then rose to 102 following a chill and returned to normal within eight hours. This was repeated twice on two succeeding days, after which there were three days of normal temperature, and again three days of chill and fever. There was no history of malaria for over three years previously, but during the second set of chills a quartan plasmodium was found; the hypothesis being a triple quartan infection latent or by parthenogenesis. The case responded readily to quinin. Recovery followed.

Case 7.—The patient was admitted October 12 with tonsillitis. Temperature continued elevated after subsidence of throat symptoms. Widal positive November 6. The patient was inoculated Nov. 9 with 500,000,000 bacteria, and November 19 with 1,000,000,000 bacteria. The duration of fever, including severe relapse, was thirty-two days. The patient recovered.

Case 8.—The patient was admitted October 26; Widal positive November 6; patient inoculated November 9 with 500,000,000 bacteria; died November 19, after three days of continuous, profuse intestinal hemorrhage.

Case 9.—The patient was admitted October 27; Widal positive November 7; patient inoculated November 9 with 500,000,000 bacteria, and November 19 with 1,000,000,000 bacteria. At the time of the first inoculation the patient was comatose; some improvement in symptoms followed the first dose, though complete aphonia persisted several days after second dose. Duration of fever twenty-eight days. Recovery.

Case 10.—Patient admitted November 2; Widal positive November 15; patient inoculated November 15 with 500,000,000 bacteria. Duration of fever seventeen days. Recovery.

Case 11.—Patient admitted November 5; Widal positive November 15; patient inoculated November 15 with 500,000,000 bacteria. Duration of fever sixteen days. Recovery.

Case 12.—Patient admitted November 6; Widal positive November 15; patient inoculated November 15 with 500,000,000 bacteria. Duration of fever eighteen days. Recovery.

Case 13.—Patient admitted November 12 from suspect ward. Widal positive November 15; patient inoculated November 15 with 500,000,000 bacteria. Duration of fever ten days. Recovery.

Case 14.—Patient admitted November 12 from suspect ward. Widal positive November 15; patient inoculated November 15 with 500,000,000 bacteria. Duration of fever eighteen days. Recovery.

In the foregoing cases the diagnosis was based on the Widal reaction, the macroscopic method being used and the end titer of each patient's serum being obtained. Besides the Widal reaction, total leukocyte counts and differential counts were made on the same day as the Widal.

In no case was actual or polymorphonuclear leukocytosis present. The feces of each was plated on Endo's medium; all suspicious colonies were fished and planted in lactose-litmus agar. From these tubes, showing a characteristic reaction, the organism was transferred to plain agar, and as a plain agar culture, was agglutinated by a known typhoid immune serum.

It was noticed distinctly that the cases which gave the lowest serum titer in the Widal reaction were those in which the symptoms were most aggravated. On the other hand, the cases which gave an agglutination in a dilution of from 1:360 to 1:720 on the tenth day, ran a mild, short course. With the exception of three of the cases cited above, and five ambulant cases, which have not been reported, the degree of prostration and toxemia manifested by these patients within ten days of their admission was the most pronounced that I have witnessed in several typhoid epidemics. The contrast following a single inoculation was consequently most remarkable. In Cases 3, 5, and 7 the result was most startling. The entire picture was changed in forty-eight hours from that of a man whom the nurses were expecting to carry out any minute, to that of a patient distinctly able to take notice.

In conclusion it may be said that the therapeutic administration of antityphoid vaccine is attended with no bad results and does in no way increase the patient's discomfort. On the other hand, its use did, in all of the cases observed, improve the general condition of the patient; while in the three cases above referred to, its action was nothing short of marvelous. In view of these facts, and granting the correctness of the hypothesis advanced above, it would seem that vaccine in typhoid fever is certainly rationally indicated.

RESECTION OF THE SPERMATIC PLEXUS FOR THE RELIEF OF CERTAIN FORMS OF DYSMENORRHEA *

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Dysmenorrhea, or painful menstruation, is the bane of many a woman's life. To be obliged to keep in bed swathed in hot cloths and stupefied with drugs for from a day or two to a week or two out of every month is sufficient to drive almost any woman to distraction, yet such is the unfortunate lot of many.

The cause of the pain in these cases has been the subject of much discussion and the most divergent views have been expressed concerning it. Some writers hold that the pain is due entirely to local conditions of the pelvic organs, while others assert that local conditions have little or nothing to do with producing the pain, but that it is always the result of some general disturbance.

Theilhaber[1] says that only in a minority of the cases is the pain due to anatomic causes, while in more than three-fourths of the cases it is the result of functional disturbances. He believes that the pain is caused by a spastic contraction of the smooth muscle fibers forming the sphincter of the internal os uteri and has devised a special knife for cutting out a section of this sphincter.

Menge[2] divides the dysmenorrheics into two classes: those with hypersensitive nervous systems and normal pelvic organs—idiopathic dysmenorrhea; and those with hypersensitive pelvic organs and normal nervous systems—secondary dysmenorrhea; but he says that these two forms present such similarities that in their nature they must be related. He recognizes this relationship by stating that all dysmenorrheas must be referred to a "menstrual painfulness of the uterus," which practically amounts to saying that the patient has dysmenorrhea because she has painful menstruation.

It seems to me that there can be no disputing the fact that abnormal local conditions may cause pain during menstruation; likewise, that in neurotic or hysterical women, or in women with unbalanced or temporarily deranged nervous systems, the performance of a function such as menstruation may give rise to pain, which under similar conditions in women, with healthy, stable nervous system, would scarcely be felt.

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* Read before the North Texas District Medical Society, Dec. 14, 1910.

1. Centralbl. f. Gynäk., xxv, 1339.
2. Centralbl. f. Gynäk., xxv, 1367.

Menstruation is not a simple function but a very complex one in the performance of which are concerned, not only the general conditions of the body as a whole, but also the local condition of three organs, namely, the ovaries, the tubes and the uterus.

If general states of the body are instrumental in producing menstruation, derangements of these general states may produce deranged menstruation. If the ovaries, the tubes and the uterus take part in the function of menstruation, abnormal conditions of these organs may cause abnormal menstruation.

Based on the location of the cause, then, we may subdivide the dysmenorrheas into three groups: (a) those due to deranged general states; (b) those due to abnormal conditions of the uterus; (c) those due to abnormal conditions of the ovaries and tubes.

As will be seen, the ovaries and tubes are grouped together. The reason for this is that the inner three-fourths of the tubes and the ovaries have the same nerve supply, and painful sensations arising from them cannot, therefore, be differentiated.

It is not my intention to take up in detail the various pathologic conditions found under these three groups, but it is to the third or tubo-ovarian group that attention will be directed. Furthermore, it is not so much my desire to define the particular disease or pathologic condition giving rise to the pain as it is to establish the fact that the condition, be it what it may, may be confined to the ovaries or to the inner portion of the tubes or to both.

The lesions found are of two kinds: gross pathologic lesions such as ovarian or tubal abscesses or large ovarian cysts, and rather inconspicuous lesions such as the angiodystrophies of the ovaries, chronic interstitial salpingitis, and adhesions of the ovaries or tubes to the intestine, omentum or neighboring peritoneal surfaces.

It is the latter class, or the inconspicuous lesions that are responsible for the pain in that variety of dysmenorrhea called ovarian. I am aware that many writers have denied the existence of the so-called ovarian dysmenorrhea, but I am convinced that they are mistaken.

I think that all physicians of experience in this line will recognize a class of women who suffer intensely at the menstrual period, yet in whom the most careful examination fails to discover any general state or any disease of the uterus sufficient to account for the pain. These patients are frequently unmarried and often have had the dysmenorrhea throughout their entire menstrual life. Others are married and have borne children without any material change in the dysmenorrhea.

A characteristic feature of the pain is that it is mostly premenstrual, that is, it precedes the flow by from one or two days to a week and gradually subsides as the flow becomes established. The pain is usually bilateral, referred to the ovarian region or the lower abdomen. It may extend down the inner side of the thighs or the outer side over the hips and is so severe that most of the patients are confined to bed for a variable time each month. The ovarian regions are very sensitive on pressure. The women are frequently neurotics or have hypersensitive nervous systems, either primarily or become so by reason of the repeated suffering, and are the ones who resort to all kinds of anodynes, narcotics, headache powders, hot whiskey and gin drinking, etc., to secure relief from the pain. About the only thing discovered on examination is tenderness in the region of the ovaries, sometimes excruciating, which becomes more marked the nearer the time is to the next menstrual period.

It was in hope of relieving these patients that I conceived and carried out the idea of resecting the nerves which supply the ovary. These nerves, according to Nagel in von Bardeleben's "Handbluch der Anatomie des Menschen," arise from two sources: (1) from the plexus renalis; and (2) from the lower portion of the plexus aorticus abdominalis or, as Frankenhäuser calls it, the plexus spermaticus, and they are purely sympathetic in their nature.

As a rule, there are two spermatic ganglia situated on either side of the aorta just above the promontory of the sacrum.

The plexus renalis lies in the angle formed by the renal artery and the aorta. From this point is given off a thick trunk which accompanies the spermatic vessels and receives several small nerves from the spermatic ganglia. These nerves, called the spermatic plexus or the plexus arteriæ ovaricæ, pass along with the spermatic or ovarian vessels through the infundibulo-pelvic or suspensory ligament of the ovary into the pelvis and distribute branches to the broad ligament, the ovary and to the ampulla of the tube and form in conjunction with uterine nerves a small ganglion situated in the neighborhood of the uterine attachment of the ligamentum ovariæ proprium. The ovary and the tube as far as the isthmus are, therefore, supplied by the spermatic plexus, while the uterus and the isthmus of the tube receive their nerve supply from an entirely different source, namely, through the hypogastric plexus. It is very evident, then, that any pain-producing irritation, having its origin in the ovary, or in the tube, can be transmitted centrally only through the spermatic plexus just described and a resection of these nerves must effectually cut off all sensation in these parts. A resection of these nerves is a simple matter if they be approached at the upper part of the infundibulo-pelvic ligament where they lie rather closely together accompanying the ovarian vessels.

The abdomen is opened in the usual manner. The infundibulo-pelvic ligament picked up with a forceps and made taut. An incision 3 or 4 cm. in length is then made through the peritoneum along the free border of the ligament beginning well up toward its proximal end. With the handle of a scalpel or any blunt dissector the two layers of peritoneum are freed from all the other tissues forming the ligament; a catgut ligature is passed around the proximal end of this mass and tied; a similar ligature is passed around the distal end and the intervening portion, usually from 2 to 3 cm. in length, is resected. The incision along the free border of the ligament is then closed with catgut and the operation is completed.

It will be readily understood that in the small mass of tissues removed are included all the nerves passing to the ovary as well as the ovarian vessels from which it is impossible to separate them. As the ureter enters the pelvis through the base of the proximal portion of this ligament, great care must be exercised not to include it in the ligature. Of course the resection is made bilaterally if the trouble is bilateral.

As these nerves are the only ones supplying the ovaries and the inner end of the tubes the effect of resecting them is, of course, to render those parts anesthetic so that they can no longer give rise to painful sensations.

It will be readily understood that the operation here recommended affects only those cases in which the pain is of ovarian or tubal origin. It does not relieve the pain when it is due to pathologic conditions within the uterus and it is necessary, therefore, to diagnose the cases correctly, and to make a careful selection of those to which the operation is suited.

That a multiplicity of causes of the pain may be present is self-evident from what has been said, and when this is the case the other conditions must be remedied if possible by proper general treatment and local operative measures if relief from pain is to be expected.

I shall not now enter into a detailed report of the cases in which I have operated, but will simply say that I have operated on over twenty women with gratifying results. I have seen women, who had spent from several days to a week or more in bed at every menstrual period, menstruate without pain and recognize its presence only by the appearance of the flow. Other patients have lost only the acute premenstrual pain, while in a few no benefit has followed, evidently owing to the fact that the pain had its origin elsewhere than in the ovaries or tubes.

No other effect than the relief of pain has been noted as the sexual and reproductive functions are not interfered with.

A CONVENIENT METHOD OF TESTING THE VISUAL FIELDS FOR COLOR WITHOUT THE USE OF A PERIMETER

FOR APPLICATION IN CASES OF SUSPECTED INCREASED INTRACRANIAL TENSION

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It was formerly supposed that inversion of the visual fields for blue and red was pathognomonic of hysteria, especially when, in addition, a contraction of the field for form was present. Not everyone is yet acquainted with the work of Babinski,[1] which has clearly shown that the perimetric examinations of hysterical patients, as ordinarily conducted, are redolent of suggestions, and that these very often influence the patient; so that the findings are not reliable except as indices of suggestibility. Thus, there is no characteristic visual field type in hysteria.

There are certain affections, however, in which the visual field is characteristically inverted or interlaced. This happens whenever the intracranial tension is increased to the point where there is an interference with the functions of the neurons which conduct visual impressions. This manifests itself most particularly, clinically speaking, toward the periphery of the retina, where the sensibility is feeblest; so that, as Bordley and Cushing[2] have shown, the red is perceived even sooner than the blue on approaching the center of the visual field in cases in which the intracranial tension is increased by edema of the brain, whether this is produced by a tumor within the cranium, by hemorrhage therein, or by some constitutional condition resulting from chronic nephritis, diabetes or other modification of the blood.

To measure this inversion or interlacement of the color fields accurately, a perimeter is of course required; but I have found that the inversion may be ascertained roughly by the following method:

The patient sits with his back to a good light, looking fixedly at a point in the distance. He is directed to signal as soon as he perceives any movement of the examiner's hand. The visual field is then approached by the observer's hand, which holds alongside and parallel two objects, colored respectively an intense, pure, bright red and a blue. After the patient signals, he is asked to signal again as soon as he perceives any color, while the center of the field is very slowly approached. The observer then stops the movement, and asks what color is seen. For corroboration, the movement is then continued until the other color is also seen.

In normal persons, blue is always seen before red. If this is not the case, increased tension may be suspected. In two recent cases, one of tumor and one of albuminuric retinitis, this method has been as positive as that with the perimeter.

If the test is performed with careful technic, it is reliable, and is a useful addition to clinical methods. Indeed, Cushing believes that when inversion of visual fields appears in the case of a tumor, operation should not be further delayed.

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[1] Babinski: La conception de l'hystérie, Paris, 1906. Williams: Papers on Hysteria: International Clinics, 1908, iii; Boston Med. Jour., 1909, i; Am. Jour. Med. Sc., August, 1910, etc.

[2] Bordley, J., and Cushing, H.: *Observations on Choked Disc*, The Journal A. M. A., Jan. 30, 1909, p. 353.

A SIMPLE METHOD OF CULTIVATING THE MORAX-AXENFELD DIPLOBACILLUS *

WILLIAM H. PETERS, M.D.
CINCINNATI

This case report calls attention to the fact that the Morax-Axenfeld bacillus grows as readily and in as characteristic manner on Dorset's egg medium as on Loeffler's blood-serum. The comparative ease with which the former medium can be prepared should render this fact of value.

To cite an illustrative case:

Patient.—J. M. W., aged 34, a blacksmith, was admitted into the service of Dr. D. T. Vail on Oct. 24, 1910. He was suffering from double catarrhal conjunctivitis, which he thought had been acquired by using the towel of his roommate who had sore eyes.

Bacilli.—Smear preparations from the purulent secretion from each eye showed the presence of isolated diplobacilli lying between the polymorphonuclear leukocytes and apparently in pure culture. The diplobacilli measured 2.7 by 0.8 and the rods had rounded ends. They stained well with Loeffler's methylene-blue, but were decolorized by Gram's method. Slants of Dorset's egg medium and Loeffler's blood-serum were inoculated with pus from each eye. After twenty-four hours' incubation, numerous characteristically pitted colonies appeared resembling those described by Morax[1] and Pusey.[2]

The pits in Dorset's egg medium were not quite so deep and the diameter was less than those in Loeffler's blood-serum, and they did not become confluent on the former medium so rapidly as on the latter. Transplants failed to grow on the ordinary laboratory media.

Neurasthenia in Young Children.—A deficiency of nerve force may be present from earliest childhood, often as an accompaniment of the "neurotic" temperament, and occasionally with mental deficiency. Cases of this condition, which might be described as "neurasthenia minor," are generally the offspring of neurasthenic or neurotic parents, and may drift into more confirmed neurasthenia in later life.—C. Riviere, in the *Practitioner.*

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* From the Pathologic Laboratory of the Cincinnati Hospital.

[1] Ann. de l'Inst. Past., 1896, 10, p. 337.

[2] *Pusey, Brown:* The Diplobacillus of Morax-Axenfeld, July 28, 1906, p. 255.

Therapeutics

ANKYLOSTOMIASIS, UNCINARIASIS, OR HOOKWORM DISEASE

These terms may be regarded as practically synonymous. They are applied to a condition characterized by symptoms which are caused by the presence in the intestinal canal of the worms *Ankylostoma duodenale* and *Uncinaria duodenalis*, or *Uncinaria americana*, which, if not identical, at least closely resemble each other. They belong to the class of nematodes in which are included *Ascaris lumbricoides*, *Oxyuris vermicularis*, and trichinæ, all of which have recently been described in this department.

It has been comparatively recent that the economic importance and the frequency of the *Uncinaria duodenalis* has been recognized, although the symptoms produced by them have been considered a clinical entity for over a century. Early in the nineteenth century, a special form of anemia was recognized as affecting miners in Hungary. In 1838, Dubini found ankylostoma in the intestine of a girl who had died of progressive anemia. In 1851, Griesinger declared that this parasite was the cause of Egyptian chlorosis. But the clinical importance of the parasite was not definitely settled until, in 1882, Perroncito showed that the epidemic of so-called miners' anemia which occurred during the building of the St. Gothard tunnel was due to ankylostoma.

Since the occupation of Porto Rico by the Americans about twelve years ago, the disease has been thoroughly studied by American physicians, especially by Drs. Ashford, King, and Stiles. These men have proved the great prevalence of the disease not only in Porto Rico, but in the southern part of the United States; have pointed out its great industrial importance; and have demonstrated a simple and effective method of cure.

The male worm is about 11 mm. in length and about 0.5 mm. in width; the female is about 15 mm. in length and about 1 mm. broad. It is found most abundantly in the jejunum, but it may be found also in the duodenum and upper part of the ileum. It may be firmly attached to the mucous membrane, or may be imbedded in the mucus on the membrane, or may be free in the intestinal canal. The eggs are passed in large numbers with the feces, and under favorable conditions may retain their vitality for a long time. These favorable conditions include warmth, moisture and darkness. Sunshine and the incidental drying are destructive to them. After passing from the body of the host, especially when the soil is dry, they rapidly become scattered about.

Their most common attack on the human subject is through the feet. Both adults and children who run about barefooted in places where the disease is endemic suffer from a dermatitis which is caused by the action of the ova or eggs on the skin. They first produce a dermatitis and next an eruption of vesicles which are liable to be infected by various bacteria, producing pustules and ulcers of varying depth, which may persist for a long time, and which, when healed, usually leave discolorations. The ova pass through the skin and into the blood by which they are carried to the lungs. Here they escape into the bronchioles, migrate to the bronchi, thence to the larynx, and into the throat, from which they are swallowed.

The eruption caused by the ova and larvæ of the hookworm is known as "ground itch." It is possible that the disease may be brought on by the swallowing of the larvæ incidental to unclean habits, the food being infected by dirty hands, or by the drinking of water containing the larvæ, but it is commonly believed that the number of worms ingested in this way is very small, and it has been found that nearly all of the subjects of the disease have also been the victims of ground itch, therefore it is considered that this round-about route is the most common method of infection.

To those who live in the northern states it might seem that this is a subject of no practical importance and of very little interest. To those who live in the southern states where the disease is endemic it might seem that the disease is so common and so well known that it is not worth while for the physician to spend any time in reading or writing about it. To those who live on the borders of regions where the disease is endemic where occasional cases are likely to be seen, it certainly is of great importance to be familiar with the disease and the modern methods of treatment. To all physicians it is a matter of interest to know the symptoms which the disease presents, and how it may be cured.

It is common to describe three classes of cases: The mild cases are characterized by pain and uneasiness in the abdomen. These symptoms are commonly attributed to indigestion, and rather apt to be more prominent on the right side of the abdomen; they may be accompanied by tenderness in that region. The pains are sometimes increased and at other times relieved by taking food. The appetite in some cases is diminished, and in others is increased. There may be headache and dizziness, and there is usually indisposition to any exertion, either mental or physical.

In cases of moderate severity the pain in the abdomen may be more pronounced, and the headache is usually commoner and more severe. There is dizziness and often tinnitus aurium. The mucous membranes and the conjunctivæ are pale; the skin dry; the appetite impaired; and there may be nausea and vomiting. Breathlessness on exertion is common, and there may be palpitation. The patient complains of fatigue and indisposition to exertion, and there may be fever.

In the more severe and advanced cases the anemia is more striking; the patient presents a pallid appearance and the conjunctivæ may show an icteric tinge. Edema of the feet and ankles is common, and sometimes there is general anasarca. There may be extensive ascites. The palpitation of the heart is severe, and dyspnea, even on the slightest exertion, is considerable. The pulse is weak and compressible, and there may be pain in the precordial region. The dizziness and tinnitus are generally very troublesome. Dimness of sight is common, and the pupils may be dilated. Often there is sleeplessness. The muscles, though apparently plump and well-nourished, are weak, and the patient is absolutely unable to do anything. Often there is considerable fever, which is, as usual, higher in the afternoon.

The examination of the feces is of great importance, both from a diagnostic and a therapeutic point of view. While in regions where the disease is endemic the general symptoms, especially the anemia and the indisposition to exertion, may lead to a presumptive diagnosis which is generally correct, the only accurate diagnosis is based on finding the eggs or the worms in the feces, and these should be carefully examined in every suspected case. After the treatment has been carried out, the only way of definitely determining whether or not the cure is complete is by examining the fecal matter and determining the absence from it of both worms and eggs.

PROPHYLACTIC TREATMENT

The treatment may be considered under three heads. The prophylactic treatment is of great importance both to the individual and to the community. As has been stated, the disease is spread by neglect in providing for suitable disposal of the discharges from the rectum. In warm climates where the disease prevails among the poorer classes of society the methods of sewerage employed in cities are unknown, and the majority of people deposit their feces in whatever situation, in field or forest, they may happen to be when the desire comes on them. When sanitary legislation reaches the point that the transmission of infectious disease by the feces is almost impossible, there will be no further danger of the transmission of this disease to uninfected persons. This of course is an immense problem, but one which it seems likely will necessarily have to be met, even in country districts, sooner or later.

The second point in the prophylaxis is the prompt curing of all sufferers from the disease. When this has been accomplished, of course the necessity of the first will be less urgent, but the carrying out of one proposal is almost as difficult as the other, and the first proposition is the most important, because the improper care of the feces results in transmission not only of this disease, but also of several others.

The individual prophylaxis, to be observed by persons living in regions where the disease is endemic consists, in the first place, of protecting the feet and legs by wearing shoes which will keep the dirt and sand away from the skin. Of less importance, but still also to be observed are cleanliness of the hands, care in the preparation of food, and the avoidance of water which may be infected. This may be accomplished by using filtered, distilled, or boiled water.

MEDICINAL TREATMENT

Several drugs have been recommended in the treatment of this disease; the most important are turpentine, oil of eucalyptus, betanaphthol, and thymol. Of these the evidence is very strong that thymol is the most useful and safest, and is fairly entitled to be termed a specific. When this drug is used the patient should be prepared for the treatment by being compelled to fast during the greater part or the whole of the previous day. The previous night he should receive a sufficient dose of magnesium sulphate to produce several watery movements. In the morning, before food of any sort has been taken, the thymol may be administered. The dose may be divided into two or three parts, which may be taken at intervals of one or two hours. The whole amount administered in any one day should be 3.0 grams (45 grains). Two hours after the last dose, another dose of the sulphate of magnesium should be given. It will be found that the thymol, having attacked the worms, has either destroyed them, or at least lessened their vitality to such an extent that they have loosened their hold on the mucous membranes, and the final dose of the Epsom salt will carry them out of the intestine.

It is important that the intestine should be so far as possible empty when the drug is taken, and the preliminary dose of magnesium sulphate not only washes out the food debris, but also the mucus in the intestinal canal in which many of the worms are often imbedded. The action of the drug is desired on the worms in the canal, and it is in no way desirable, in fact it is undesirable, that the thymol should be absorbed. Consequently, no fatty food, alcohol or oil should be taken lest absorption be caused. Castor oil should not be given as a cathartic, although senna may be substituted for the sulphate of magnesium, but it is no better.

The treatment with thymol should be repeated at intervals of three or four days or a week. Stiles, who has given very explicit directions for the treatment of this disease, recommends that the treatment should be commenced on Saturday and carried out on Sunday, and that it should be repeated on successive Sundays until examination of the feces shows entire absence both of the eggs and of the worms.

Finally it remains to speak of the treatment of the results of the infection. It is surprising with what rapidity patients commence to improve after the worms have been removed by the use of thymol; however, the administration of iron will hasten the recovery from the anemia. No form of iron is more useful than the fresh Blaud pill (pilulæ ferri carbonatis) in a dose of 0.20 gram (3 grains) three times a day, after meals; or the reduced iron (ferrum reductum), in dry capsules, in dose of 0.10 gram (2 grains), three times a day, after meals; or the tincture of iron (tinctura ferri chlorid) in a dose of from 3 to 5 drops, in fresh lemonade or other sour mixture, three times a day, after meals; or the patient, if a young child, may be given an *Eisenzucher* tablet (saccharated iron oxid), each 3 grains, to chew up like candy, thrice daily, after meals.

The tincture of iron may be well ordered as follows:

℞	c.c.		
Tincturæ ferri chloridi	5		fl.ʒiss
Syrupi acidi citrici	25	or	fl.℥i
Aquæ	ad 100		ad fl.℥iv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

℞	c.c.		
Tincturæ ferri chloridi	5		fl.ʒiss
Acidi phosphorici diluti	10		
Glycerini	10	or	āā fl.ʒiij
Aquæ	ad 100		ad fl.℥iv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

Or

℞	c.c.		
Tincturæ ferri chloridi	5	or	fl.ʒiss
Elixiris *aromatici*	ad 100		ad fl.℥iv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

As has been repeatedly urged, there is absolutely no necessity for the administration of any other form of iron, than those above mentioned. No organic iron can possibly do the physiologic or therapeutic work of the above irons, or do it any more pleasantly. If one adds to the above list the syrup of the iodid of iron, no other iron preparation is needed in the Pharmacopeia, and it is probable that a small dose of sodium iodid, administered at the same time or during the same day as one of the above iron preparations, would do better iron and iodid work than the iron iodid, certainly as good.

THYMOL, U. S. P.: THYMIC ACID

Description.—Thymol, genitive *thymolis,* is a phenol obtained from the oil of thyme (*Thymus vulgaris*). It occurs as large, colorless crystals, insoluble in water, but soluble in alcohol and in oils. Thymol is incompatible with a large number of drugs, such as acetanilid, antipyrin, camphor, chloral, menthol, and quinin.

Action.—It is slightly irritant to the skin, and very irritant, in concentrated solutions, to mucous membranes. If taken in the form of crystals, it is very slowly absorbed, unless fat or oil is taken with it or soon after it. It acts externally and in the alimentary tract as an antiseptic. It is much less soluble than phenol (carbolic acid) in the fluids of the stomach and intestine, and therefore much less readily absorbed; however, when much is absorbed, the symptoms are those of phenol poisoning. It is excreted by the urine in combination with glycuronic and sulphuric acids. Part of it is oxidized. During the excretion it may cause considerable kidney irritation, and if in large amount, even inflammation of the kidneys.

Action of a Therapeutic Dose, or the Primary Physiologic Action.—There should be no evident action from thymol, except locally the action of an antiseptic and internally the lessening of bowel fermentation and putrefaction, and the killing or stupefying of intestinal parasites. Any systemic effects are undesired, and are those of depression or beginning poisoning.

A *toxic* dose or toxic absorption gives symptoms of circulatory and muscular weakness, tremblings, cerebral irritation, renal irritation, and collapse. The treatment would be washing out of the stomach; a brisk saline purgative, as magnesium sulphate; circulatory stimulation; and other treatments indicated in phenol poisoning.

Therapy.—Thymol is too expensive to use as a general external antiseptic, and too sweet in order for use on wounds, ulcers, etc., as its odor is very attractive to flies, which is, of course, very undesirable. It is antiseptic in 0.1 per cent. solution, and has been used in this strength and much weaker for mouth washes and gargles; also in oily solutions as sprays for the nose and throat. Unless the solution is a weak one, it is irritant to the mucous membrane. It may be used as an antiseptic gargle in follicular tonsillitis and diphtheria, but peroxid of hydrogen solutions are much better. Thymol ointments in strength of from 5 to 10 per cent. have been used in various skin diseases, especially when there is itching. Lotions in weak solution have been used with advantage in various forms of pruritus.

As an intestinal antiseptic in diarrheas and in typhoid fever thymol has been generally used. It has no advantage, however, over salol (phenyl salicylate), and may cause more general disturbance. The principal use for thymol is as a specific in uncinariasis. It has also been used as an anthelmintic against the tape-worm and the round-worm.

Official Preparations.—Thymol enters into the composition of *Liquor antisepticus* (U. S. P.), and *Liquor antisepticus alkalinus* (N. F.), both used as gargles and mouth washes. Both preparations should be diluted for use. The dose of thymol itself is 0.10 gram (2 grains), best administered in capsules and never taken on an empty stomach unless a large amount of water or other liquid is taken at the same time.

Administration.—As already stated, the principal use for thymol is against the ankylostoma or uncinaria. It is here given in large doses on the morning following brisk catharsis. The best method is to order it in capsules, and then have the patient uncap the capsule at the moment of taking, and take it with a cup of tea or coffee, without milk, or a cup of plain hot water. It is unwise to give the patient milk or any other food at the time the thymol is administered, as it is desired that the intestinal parasites shall partake of the thymol, and food might interfere with the object desired. For action on this parasite the drug may be ordered as follows:

R	Gm.		
Thymolis	5	or	gr.lxxv

Fac capsulas 10.
Sig.: Take three capsules, with plenty of hot water or other hot liquid, at once, and repeat in one hour.

As stated, it is presumed that cathartic action has taken place either early in the morning or during the night, and the first dose of the anthelmintic should be at seven, and the next at eight o'clock. In from two to four hours magnesium sulphate should be administered, and one hour after this saline, the patient may receive food. This treatment should be repeated in a week.

SOLUTIONS FOR USE IN THE EARS

℞	Gm. or c.c.		
Cocainæ hydrochloridi	0|20		gr.iv
Sodii boratis	0|50		gr.x
Solutionis epinephrin (1-1000)	5	or	
Glycerini	5		āāfl.ʒiss
Aquæ camphoræ	ad 50		ad fl.℥ii

M. et Sig.: Ear drops. Warm before using.

℞	Gm. or c.c.		
Cocainæ hydrochloridi	0|15		gr.iii
Acidi borici	0|25	or	gr.v
Glycerini	10		fl.ʒiii
Aquæ	ad 25		ad fl.℥i

M. et Sig.: Ear drops. Warm before using.

R	Gm. or c.c.		
Acidi borici	2		gr.xxxv
Tincturæ opii	10	or	fl.ʒiii
Glycerini	20		fl.ʒvi
Aquæ	ad 50		ad fl.℥ii

M. et Sig.: Ear drops. Warm before using.

℞	Gm. or c.c.		
Epinephrini chloridi	0|03		gr.½
Glycerini	20	or	fl.ʒvi
Aquæ	ad 50		ad fl.℥ii

M. et Sig.: Ear drops. Warm before using.

EYE DROPS

℞	Gm. or c.c.		
Acidi borici	0|25		gr.v
Aquæ camphoræ	15	or	fl.ʒv
Aquæ	ad 25		ad fl.℥i

M. et Sig.: Eye drops.

℞	Gm. or c.c.		
Sodii boratis	5	or	ʒiss
Aquæ	100		fl.℥iv

M. et Sig.: Eye wash. Warm before using.

℞	Gm. or c.c.		
Zinci sulphatis	0|10	or	gr.ii
Aquæ	50		fl.℥ii

M. et Sig.: Eye drops.

FOR TOOTHACHE

℞	Gm. or c.c.		
Tincturæ opii	10		
Olei caryophylli	10	or	āāfl.ʒiiss

M. et Sig.: Rub on the gum, or apply with cotton to cavity.

Syphilis and Pauperism.—It is a matter of incalculable importance for society in general and for the community in particular to preserve the productive forces instead of losing them. Prevention, and prompt treatment of syphilis can save great sufferings and heavy expenses. It is much cheaper to treat syphilis promptly and thoroughly than to leave infected people uncared for, and thus wait until the affection becomes a permanent infirmity with the consequent disability. Preventive measures for diseases are indeed economical. These may be formulated in four paragraphs as follows: (1) Instruction and education increase the standard of morality and inculcate high respect for women. (2) Diminish the overcrowding in the tenement houses. In factories and establishments where girls and boys are employed, rules of strict respect for each other must be enforced. (3) Those who have been infected with syphilis must be treated. Hospitals should take care of venereal patients, and dispensaries should be within easy reach of everybody. (4) Prostitution should be under municipal surveillance, and infected prostitutes should not be allowed to remain at large, but should be confined in hospitals and kept under treatment until the manifestations of lues are no longer dangerous for transmission.—A. Ravogli, in *Interstate Medical Journal.*

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ANCIENT EGYPTIANS AND MODERN MEDICINE

When, in 1907, it was decided to increase the height of the great dam at Assuan, the Egyptian government sought to lessen, as far as possible, the destruction of the monuments and relics of ancient life on the Nile, by securing for scientific study as much as possible of the most valuable material which would be submerged by the rise of the waters. Numerous cemeteries on both banks of the river were explored, and no less than 6,000 bodies, representing burials during a period of 5,000 years, became available for study. Dr. Elliot Smith, professor of anatomy in the medical school at Cairo, who had already done much work with similar material, was in charge of the anthropological investigations, and largely because of his understanding of pathology the results as reported contain much of medical interest.[1]

It seems that even six thousand years ago, in predynastic times, the population of the Nile valley was comparatively highly civilized, so that the history of civilization must go back much farther than the sixty centuries it can now be followed. During all that time man has been afflicted by at least some of the same diseases from which he now suffers, although perhaps not to the same degree. Professor Smith found no positive evidence of syphilis in the Nubians; tuberculosis was apparently uncommon, and the characteristic skeletal changes of rachitis were not observed. Rheumatoid arthritis seems to have been prevalent, especially in predynastic times. Urinary calculi were occasionally found, and one predynastic calculus analyzed by Shattock was found to be composed of a central body of urates and a shell of phosphates, indicating that six thousand years ago, as now, urate calculi caused cystitis and ammoniacal decomposition of the urine. The *Micrococcus ureæ* is probably quite as old as civilization. Fibrous adhesions around the appendix give the lie to jests about the "new-fangled fad of appendicitis." Gout left its traces in the form of "chalk stones" then as now; but caries of the teeth did not make its appearance until the early dynasties, first being found in the wealthier classes, and not becoming common to the masses until Christian times. Surely there was at this time no change from whole wheat to white flour—the cause to which our British colleagues are now ascribing the modern prevalence of dental troubles.

The chemists have also examined mummy material to some extent. Embalming as practiced by the Egyptians consisted simply in removing most of the viscera, pickling with salt, and letting the dry climate do the rest. Such preserved tissues, even after centuries, retain some of their original characteristics. When softened by soaking in weak alkali the different organs can be identified; the tubules of the kidney and the different layers of the skin are still recognizable (Ruffer).[2] A desiccated heart contained in a vase in the Louvre, and supposed to have been the circulatory center of Rameses II about thirty-one centuries ago, was found to show still the structure characteristic of cardiac muscle.[3] The fatty elements seem to resist chemical change especially well, and infiltrate the tissues in replacement of the decomposing elements.[4] The proteins remain in small part apparently unaltered and coagulable by heat, although they are largely decomposed into proteoses and other cleavage products. In the mummified tissues the usual amino-acids of proteins can be found.[5] It would seem that the biologic characteristics of the proteins are lost before the chemical, for most of the attempts to secure the precipitin reaction with mummy proteins have been unsuccessful. Only with the extremely delicate anaphylaxis reaction can the human origin of mummy tissues be established.[6]

INDIVIDUAL LIBERTY AND THE PUBLIC WELFARE

Legislation limiting women's labor to fifty-four hours a week is opposed by a representative of a manufacturers' association on grounds of pure chivalry—because this official is for woman, and believes in placing no restriction whatever on her activities. We are reluctant to align ourselves with those cynics who profess to feel suspicion when they see a representative of a manufacturers' association suddenly aroused to tender concern for the abstract rights of womanhood, or when they see the same association generously and disinterestedly engaged in vindicating those rights. Doubtless the members of the association are perfectly sincere in their belief that they know best what working women really want, and that they know better what is good for women than do the sociologists and physicians who have studied the question. We are even ready to credit these manufacturers with faith in the amusing arguments of their representative. The human mind is organized with a marvelous and almost unlimited capacity for belief.

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[1] The Archeological Survey of Nubia, 1907-8, vol. ii, Drs. G. Elliot Smith and F. Wood Jones. A full review is given in Nature, 1910, lxxxv, 310.

[2] Ruffer, M. A.: Histology of Egyptian Mummies, Brit. Med. Jour., April 24, 1909.

[3] Brit. Med. Jour., April 28, 1906.

[4] Schmidt: Ztschr. f. allg. Physiol., 1907, vii, 369.

[5] *Abderhalden and Brahm*: Ztschr. f. physiol. Chem., 1909, lxi, 4.

[6] Uhlenhuth: Ztschr. f. *Immunitätsforsch.*, 1910, iv, 774.

The arguments in favor of "emancipating" woman by permitting her to work twelve, fourteen, sixteen or even eighteen hours a day if the fancy strikes her (and if she can find a kind-hearted employer willing to humor her little whim), seem good material for the cartoonists and paragraphers, but too flimsy to deserve refutation in a serious periodical; and, indeed, we should not mention them except that the underlying assumption is one which still has weight with many persons, and one on which the opponents of public health measures always rely. This assumption is that law is the only social agency which interferes with the freedom of the individual, and that a law prohibiting an individual from doing any act necessarily limits that individual's liberty. Compulsory vaccination, government supervision over foods and drugs, local option, the enforcement of quarantine, the compulsory reporting of contagious diseases—in fact, almost all measures for the public welfare—are bitterly decried in some quarters as infringements on the liberty of the individual. In the present instance, a few sorely misjudged philanthropists are determined that working women shall not be allowed to part with an unprofitable abstract right which the latter would like to exchange for more practical freedom.

It will be a gain for the world when the academic concept of absolute liberty departs at last to that limbo set apart for theoretical abstractions which have no relation to practical affairs. Absolute liberty is as impossible of achievement as a perfect vacuum, and as inconsistent with the conditions of life. We live in the midst of coercions, physical, social, economic and legal; and often a technical prohibition is actual release from oppressive compulsion. Effective freedom is built up as much of limitations as of opportunities. No one can draw breath and be entirely ignorant of this principle, yet so many disregard it that it is worth while for those who are working for reform in matters of public health and welfare to see to it that the public not only knows wherein its freedom consists, but realizes it.

THE EFFECT OF EXERCISE ON THE BLOOD-PRESSURE AND PULSE

A systematic investigation of the effects of various forms of exercise on the systolic, diastolic and pulse-pressures and on the pulse-rate has been carried out by Dr. O. S. Lowsley.[1] The observations were made on healthy men, mostly young athletes who were in training, and the results obtained were about what might have been expected. The blood-pressure and the pulse-rate were universally increased during exercise and were found to be above normal even at the end of periods of very exhausting work.

In this Lowsley's observations differ from those of certain other investigators, and he attributes this to the fact that he was able to take observations immediately after the cessation of exercise, before the subsequent subnormal phase had set in. After exercise there is a period of subnormal blood-pressure, and the more exhausting the exercise, the more marked and prolonged will this phase be. The rapidity with which the pulse-rate drops to normal is also determined by the degree of exhaustion. There is often observed, however, a secondary rise in rate during the period of subnormal blood-pressure. Very violent exercise of even a few seconds, as in the running of a hundred-yard dash, causes a much more pronounced and lasting negative phase than does more prolonged but moderate work. Gräupner has shown that mild rapid exercise causes a rise in blood-pressure in normal individuals which outlasts the period of acceleration of the pulse, while in individuals with weak hearts the blood-pressure falls before the pulse-rate has reached normal.

Lowsley suggests that the duration of the negative phase is a very fair index of the strain on the circulatory system and that the test might be used in determining the fitness of any individual for the performance of certain forms of exercise. He believes that if the negative phase lasts less than an hour it may be considered well within the "hygienic limit," but that if it lasts more than two hours it is a sign that the margin of safety has been exceeded. Physical directors have been obliged to depend largely on their general impression of the effects of races, games, etc., on their charges, except in the elimination of those who are obviously unfit, and such a measurable factor should be of considerable help to them in deciding the qualifications of those who are apparently sound.

SOCIOLOGY AND MEDICINE

The problems of sociology are, in most instances, problems of preventive medicine, and many of the problems of preventive medicine resolve themselves into sociologic questions. The cure of disease in its larger aspect lies in its prevention in the individual, the community, the state. Medicine in its practical application must inevitably become almost wholly a problem of prevention. This involves its operation on the mass rather than the individual, and, therefore, it becomes a sociologic problem, with the knowledge acquired through the study of pure science to aid in its solution. Waiting for disease to arise in the individual, and then attacking it, involves an enormous economic waste, a waste of time, energy, earnings, efficiency, of life itself, to say nothing of the suffering, which causes a waste of nerve force, or of the tax on those immediately surrounding the individual and charged with his care. Likewise, philanthropy, state or private, directed to the relief of individual suffering and disease due directly or indirectly to faulty sociologic or industrial conditions, even though at present commendable and necessary from the humanitarian standpoint, means a tremendous waste. The vast public appropriations for hospitals and sanatoriums for the care of individuals suffering from contagious and infectious diseases — tuberculosis for instance — when weighed against prevention really constitute a waste. Prevention means the saving of most of this waste.

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[1] Am. Jour. Phys., March 1, 1911.

As great strides are being made in the acquisition of ultimate scientific knowledge, so also real progress is being made on the side of preventive medicine involving sociologic questions. A mere enumeration of some of the enacted and proposed legislative measures along the lines of public health and welfare will illustrate the point. The national Food and Drugs Act, supplemented by state and municipal enactments concerning milk and other foods; quarantine laws, the reporting and supervision of epidemic and other contagious and infectious diseases; compulsory vaccination; the investigation and regulating of public water-supplies, sewage disposal, etc., and, coming more truly within the realm of the sociologic, child labor laws, and laws concerning minimum wage and minimum hours of labor for both men and women; employers' liability laws; laws compelling the employment of safety devices in industrial pursuits; laws against the use of injurious chemicals in the arts; the establishment of public playgrounds; laws regulating the building of tenements, factories, etc., providing for proper light and air space; school inspection and open-air schools; laws to secure better housing conditions, better hygienic conditions in prisons, etc., and for the regulation or prevention of the social vices—all of these are problems of preventive medicine. Many of these measures have been enacted into laws and carried into effect either nationally or locally, and most of these topics are at the present time the subject of active agitation in the newspapers, in the magazines, in medical and sociologic associations, in congress or in the legislatures.

Seemingly, a good deal has been accomplished along these lines, but really only a beginning has been made. The problems of prevention may never attain complete solution, just as medicine may never become an exact science; but in both we are surely progressing. The sociologic problems of preventive medicine which have attained partial solution so far have been solved by the strenuous fighting of the physicians—the scientists—aided by the sociologists, advanced thinkers, the so-called theorists or reformers, who have had to contend every inch of the way against the reactionaries who have failed to see their own real interests. More recently, however, the practical mind has been made to see the material advantage in measures that were formerly thought to be merely visionary; and so we find a more liberal and tractable attitude on the part of councils, legislatures and congresses, corporations and individuals along lines that make for the public health and welfare, such as improvement in factory and other industrial conditions, the prevention of injuries, first aid, sick benefits, workmen's compensation laws, shorter hours of labor, minimum wage questions, and better housing conditions; and, in addition, we have the tremendous public activity in general hygienic and health matters.

In many of these measures of prevention we are behind foreign countries, as in the protection of workmen from injury and from occupational diseases in industrial pursuits, and in employers' liability and workmen's compensation laws. But the importance and justice of these things are becoming recognized by the employers of labor here, who realize that they have no moral right to exploit their employees under unhygienic or dangerous conditions to life and limb, and throw on the community the burden of caring for incapacitated wage-earners or their dependents. The injustice of this policy has reached the point of national recognition, and the President in 1910 approved a resolution adopted by Congress, calling for an official investigation of this matter. Opposition to such beneficent measures will, of course, always exist, and reactionary measures will be attempted, as in the instance of the efforts to abolish the tuberculin test of cattle in Illinois and Wisconsin, and the recent opposition of the secretary of the Illinois Manufacturers' Association to the limitation of the hours of labor of women in all occupations in Illinois to fifty-four hours a week. But the tide of progress in these sociologic measures of preventive medicine cannot be permanently stemmed, and along with legislation for a national department of public health—another measure whose object is prevention—they will be adopted sooner or later. Progress in knowledge is never along direct lines, but always in zigzags, which nevertheless end farther forward than where they started.

Current Comment

NEW AND NONOFFICIAL REMEDIES IN THIS ISSUE

A little over six years ago the Council on Pharmacy and Chemistry was created. No medical organization or society has caused such a revolution as has this Council in the six years it has been in existence. The nature of this revolution is known to all readers of The Journal, and it is not necessary to enlarge on it. The work of the Council has been both critical and constructive. The constructive part has resulted in the publication of an annual known as New and Nonofficial Remedies, or, in brief, N.N.R. This annual contains a list of the preparations which have been accepted by the Council; in other words, the preparations which have complied with the ten rules adopted. Practically all these articles are proprietary preparations, and N.N.R. is the only book, so far as we know, to which a physician can go for accurate information, impartially presented, regarding such medicines. The manufacturers may be depended on to furnish the medical profession with plenty of statements of the optimistic kind, but the better class of medical men to-day are not so easily satisfied with such information as they were five or six years ago. In order that every reader of The Journal may have it on hand for convenient reference, N.N.R. for 1911 is sent as Part II of this issue. It is recommended that this book be examined critically, and especially is it urged that physicians read the rules, which are printed in the front of the book, bearing in mind that these rules represent the principles on which a preparation is accepted or rejected. Much thought was given to the preparation of these rules, and the Council believes that they represent just principles. If our readers agree with the Council, then they certainly ought to limit their prescribing to those proprietaries which have been accepted. The Council has decided favorably or unfavorably concerning practically all the proprietary medicines on the American market; hence it is safe to assume that those not included in N.N.R. have not been accepted because their manufacturers either could not or would not make them conform to the rules.

PENNSYLVANIA MILK INSPECTION

The state health officers of Pennsylvania are making the seventh inspection of the more than 40,000 premises producing milk for sale. This work in Pennsylvania is said to be done in a more comprehensive way than has been attempted in any other state. The inspection is not only extended to premises producing milk for wholesale or retail distribution, but is made on every farm producing milk for sale to creameries, butter-making establishments, cheese factories, condensories, etc., and even includes dairy farms where the product is worked up at home for sale in the markets. The health department's inspection is purely a sanitary one and deals with the cleanliness of the cow, of the stable, the cow-yard, the milk-house, with cleanliness on the part of the milker and the purity of the water used about the dairy farm and milk house. It is entirely different from that conducted by the state veterinarian, who concerns himself with the health of the herd, and that by the dairy and food commissioner, who limits himself to the use of preservatives and adulterants in the milk. These different forms of supervision of milk production and distribution should insure a vast improvement in the quality of the milk-supply and be reflected in the general health conditions in the state.

FACTORS IN RAILWAY ACCIDENTS

According to Accident Bulletin 37 of the Interstate Commerce Commission, the number of persons killed in train accidents during July, August and September, 1910, was 321, and the number of the injured was 3,892. "Accidents of other kinds" are said to have numbered 22,328—2,948 persons having been killed and 19,380 injured. This includes those accidents sustained by employees while at work, by passengers in getting on or off cars, by travelers at highway crossings, by persons doing business at stations, etc., by trespassers, and others; but excludes "industrial accidents" and accidents to employees resulting only in slight injury. These figures, which read like statistics from some seat of war, are, it should be remembered, for but one quarter of the year and for the single industry of transportation. Some accidents, as clearly appears from the bulletin, are due to the element of human fallibility, as, when an engineer fails to heed a signal, or an operator delivers an incorrect order. They indicate the need for installing, wherever possible, safety devices, in regard to which Europe is said to be far ahead of the United States. Another cause alleged by a practical railroad man[1] is a tendency among railroad employees to make haste by cutting red tape. A third cause is the deliberate, cynical disregard of human safety which foreign observers are prone to consider an American characteristic. This is a factor which is not evident in the accident bulletins; but that community is fortunate which has no witness to its presence. Chicago, for instance, has the notorious "death-strip," a section of double street-car tracks laid so close as barely to permit cars going in opposite directions to clear each other, thus sentencing to be crushed to death any unfortunate—young child, aged, infirm, uninformed or merely heedless person—who happens to be caught between two such cars. This particular strip was constructed with full knowledge of its possibilities, the street-railway companies offering the amazing extenuation that the public would "become educated" to the danger. This expectation, it may be added, has been justified; at least, those members of the public whose education has been finished on the "death-strip" would now fill a small cemetery. This is merely one example. There are others in other cities. When the people are awakened to the possibilities and the necessities of the whole situation there will be a change. The reputation of this country for carelessness with regard to human life is not an enviable one.

COMMERCIAL UNTRUTHFULNESS—A PASSING EVIL

Among Europeans it has long been held that exaggeration, hyperbole, even humbug, is a characteristic that finds its highest development in the United States. We have been told this so often that, as a nation, we have almost come to believe it ourselves. Particularly, it is alleged, has this trait been prominent in the commercial world. It is true that in the past the protection accorded the American consumer has been largely a matter of academic interest rather than of practical legislation. Even to-day the man in the street purchases as "all wool" clothes made of a mixture of shoddy and cotton. In matters more closely connected with his life and health, however, the American citizen receives a greater degree of protection than is accorded the citizen of any European state. The passage of the federal Food and Drugs Act and its enforcement by honest and efficient officials have done much to safeguard the American people from those who would jeopardize the health of the nation for their own financial advantage. In a field peculiarly its own, the American Medical Association through THE JOURNAL and the Council on Pharmacy and Chemistry, has undertaken a task such as has been attempted in no other country—that of giving reliable information regarding medicinal products of a proprietary nature used by the medical profession. Untruthfulness and even exaggeration regarding the virtues of products put out for the use of physicians in treating the sick, is a lesser evil in the United States than it is in any

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[1] Fagan, J. O.: Confessions of a Railroad Signalman, Houghton, Mifflin & Co., Boston, 1908.

European country. Yet less than a decade ago there was probably more fraud in the exploitation of proprietary medicines in the United States than existed anywhere else in the world. Thanks to a vigorous campaign carried on both by enlightened laymen and by the organized medical profession, the public consciousness has been awakened and the United States, instead of standing lowest in the scale of commercial probity regarding the sale of medicinal products, now stands at the head. That this fact is recognized by intelligent Europeans is evident from an editorial by Professor W. Heubner of Göttingen, a translation of which appears on another page.[1] We believe that, so far as pharmaceutical products are concerned, the American public is better protected, and the American medical profession more reliably informed, than is the public or the medical profession of any other country in the world.

ANIMAL EXPERIMENTATION BY CLERGYMAN SCIENTIST

According to a recent number of the Pittsburg *Christian Advocate*, the Rev. Maitland Alexander, pastor of the First Presbyterian Church of Pittsburg, is carrying on a series of experiments on monkeys in the hope of finding a serum for infantile paralysis. It seems that the Rev. Mr. Alexander has worldly possessions which enable him to interest himself in any avocation and that he has taken up scientific work, in addition to his professional duties, in the hope of helping to check the awful ravages of infantile diseases. The *Advocate* thinks it strange that some sentimentalists have not tried to create a public sentiment against Dr. Alexander and his associates for their use of monkeys. That this has not been done is truly surprising; doubtless the fact has not yet been brought to the attention of *Life*.

POSOLOGY

The determination of the proper dose of medicine is often a difficult problem; and the following from Manquat's "Principles of Therapeutics" is worth quoting:

> We should like to note that it is not good practice to seek to secure complete functional correction by means of drugs. If, through hygiene, the organism is placed under the conditions of optimum of function, a small dose often suffices to bring about restoration of the disturbed function. It is often better to be content with improvement and modestly live according to appropriate hygiene rather than to seek the medicamental triumph of complete functional restoration which will not last. A patient with mitral stenosis, for instance, who knows enough not to ask of his heart more than it can give, will have the greatest chances of continuing long without the aid of medicinal assistance; and when one is at last obliged to resort to digitalis, minute doses, as has been shown by Dr. Huchard, are to be prescribed. To content oneself with producing diuresis, through theobromin, in a patient suffering from renal insufficiency would be a reprehensible practice; it is better, first, to restrain all the endogenous and exogenous intoxications, and prescribe only small doses of the diuretic remedy, which can be repeated whenever necessary. The patient's mode of life and alimentation should first of all be adjusted to his functional forces, while medicinal intervention should be regarded as a therapeutic adjunct. There is a case, however, in which a large dose is demanded from the beginning; that is, in the presence of an accident menacing life, when an active medicament alone can restore the adequate function of the failing organ. Such is in particular the case in cardiac asthenia capable of endangering life, or in an alarming dyspnea, or in sudden anuria, in which large functional doses are necessary. There should then be no hesitation in seeking energetic action, unless some positive contra-indication exists. The patient's salvation may depend on such action.

The principles stated are correct. The drug is to be regarded only as a staff to assist lightly over the difficult places, and not as a strong crutch to bear the whole burden. First throw away the pack and the other impedimenta; give entire freedom of action to all the natural forces; assist by the staff only as actually needed and the steep will be surmounted. But when there is danger of falling over the precipice, then the most vigorous assistance must be supplied on the instant. The practical application of Manquat's plan, selecting in each instance the proper drug in the proper dose, and for the proper length of time, is a matter of knowledge, experience and the nicest discrimination.

UNIFORMITY IN DEATH CERTIFICATES

The increasing attention paid to vital statistics by the present Director of the Census cannot fail to be gratifying to physicians. For the accurate collection and tabulation of mortality statistics, not only is it necessary that uniform laws be adopted and enforced in the different states; it is also essential that local registrars, and especially physicians, follow a uniform system of nomenclature in filling out death certificates and reports. The American Medical Association for several years has had a Committee on Nomenclature and Classification of Diseases, which is cooperating with others, with a view to securing greater uniformity in terminology. Representatives of the various civilized governments (the United States included) have prepared an international list of causes of death which has been adopted by over twenty of the leading nations. In order to place this list in convenient form for ready reference by physicians, the bureau of the census is distributing to physicians, in large quantities, a pocket reference list in which are tabulated 189 causes of death, with notations showing the proper form in which the causes of death should be reported. The pamphlet also contains a list of undesirable terms and the history of the extension of the registration area in the United States. It is convenient in form and should be in the hands of every practicing physician. Any physician who has not already received a copy from the census bureau can secure one by addressing a postal card to the Director of the Census, Washington, D. C. General cooperation in the use of a uniform nomenclature will greatly increase the value of our vital statistic figures and reports.

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[1] Page 1155, this issue, abstract 106.

AN EARLY EXPONENT OF THE GERM THEORY

Long before Pasteur demonstrated the relation of germs to disease, and 163 years before the discovery of the tubercle bacillus by Koch, Benjamin Marten, M.D., of London, is said to have published a book in which he set forth in considerable detail a theory of disease that covers in a surprising way the present accepted germ theory. His book, dated 1720, is entitled "A New Theory of Consumptions, More Especially of a Phthisis or Consumption of the Lungs." A number of copies of this book are in existence, one in the British Museum, and the February issue of *Janus* contains a reproduction of the title-page, and an article by C. A. Singer, in which are quoted at length the exact words of Marten in which he elaborates his theory. Speaking of "consumptions" in general, he says: "The original and essential cause, then, . . . may possibly be some certain species of animalcula or wonderfully minute living creatures, that by their peculiar shape, or disagreeable parts, are inimicable to our nature." and they may gain access to our bodies by the air we breathe, the food we eat and the liquor we drink, or perhaps in other unknown ways, and "being there deposited in a proper nidus or nest and being produced into life, coming to perfection or increasing in bigness, may by their spontaneous motion and injurious parts . . . cause all the disorders that have been mentioned." viz., plague, venereal disease, measles, small-pox, the "common rheum" and leprosy. He then develops this theory so as to account for tuberculosis of the lungs, and states his belief that if he had had glasses strong enough he would have been able to see these minute organisms. He discusses the possibility of intra-uterine or hereditary transmission, remarks that it is reasonable to suppose that specific diseases are due to specific organisms, and considers epidemic diseases in the light of his theory. He calls attention to diseases that seem to be communicated by contact, and from the fact that scabies is transmitted in this manner and is due to a little animal that could be seen by the glass, thinks it reasonable to conclude that syphilis might be carried in much the same way, although the organism could not be seen. He did not believe that all diseases were due to such organisms, but that those named probably were. He advanced this idea only as a theory, and in it he foreshadows the theory of bacterial toxins, for in speaking of treatment he recognizes the difficulty of killing the germs in the body, saying that even that would not cure the disease, as "their pernicious effects could not be supposed to be thereby so immediately cured, any more than destroying a dog that had bit a man could be supposed to cure the wound he had made with his teeth." It is astonishing how well, under the state of scientific knowledge at that time, he had worked out even details of his theory and how closely he skirted the reality. He thinks it is reasonable and probable, and hopes it will "afford sufficient hints to some able hand to carry the theory much farther than I have done, and, it may be, bring it to absolute demonstration." It was over a hundred years before this was done by Pasteur and Koch.

THE REFORMED ALMANAC AS A HEALTH EVANGELIST

From time immemorial the almanac has been the special advertising prerogative of the "patent medicine" company. Who does not find among the earliest recollections of his childhood the almanac with its medley of calendar, astronomical events, weather predictions, old jokes, medical advertisements and patients' testimonials? At least one such almanac was to be found in every household and it was, perhaps, the most frequently consulted book in the family possessions. To it the children went to find on what day of the week Christmas, New Year's, the Fourth of July and the family birthdays occurred. Mother and the girls always went to it to find when Easter was to come that year. Father was careful to look for the phases of the moon before doing his spring planting and grandmother used it to verify her predictions as to whether next winter would be mild or severe. Its value as an advertising medium was recognized by innumerable nostrum firms, which for years issued almanacs by the million copies. One of our later-day state board of health secretaries[1] has realized that if an almanac is a good thing to advertise nostrums it is an equally good thing to advertise health. The January-February number of the *Virginia Health Bulletin* is issued in the form of an almanac. It has the calendar by months, the phases of the moon, the time when the sun and moon rise and set for each day, the important historical events and all the other time-honored earmarks of almanacs, but instead of the musty jokes and stereotyped testimonials of patients "pronounced incurable by the doctors," but cured by two bottles and a half of Indian Bitters, it has sanitary aphorisms such as "An open window is better than an open grave," "A dirty well is more dangerous than a dirty kitchen," "A good iron pump costs less than a case of typhoid," "Good water is one of the best insurance policies a family can carry," "Two dollars for a doctor is cheaper than a hundred dollars for a funeral," "If your milk man brings warm milk, make it hot for him," "Wire screens in the window keep crape from the door," "Typhoid germs are small in size, but they are more expensive to keep than blooded horses," "A light overcoat is better than a heavy cold," "Many a cough ends in a coffin," "It is better to sleep in the fresh air than in the fresh grave." A special subject is assigned to each month—small-pox to January, pneumonia to February, measles to March, infants' complaints to May, typhoid to July, colds and influenza to November, and consumption to December—with a page of common-sense advice, in plain, simple language, under each topic. The Virginia Department of Health deserves hearty congratulations for its success in reforming one of our oldest family institutions and converting it into an evangel of health.

Syphilis and Cardiovascular Disease.—Syphilis as a cause of cardiovascular disease does not receive the attention its importance merits. Endarteritis with its consequences even to the extent of complete obliteration of vessels, especially in the heart and brain, can be traced to this disease.—C. W. Chapman, in the *Practitioner.*

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[1] Dr. E. G. Williams, Richmond, Va.

Medical News

COLORADO

Personal.—Dr. Frank R. Spencer, Boulder, has gone to Europe.——Dr. Edward Delehanty has been elected president of the staff of St. Joseph's Hospital, Denver, vice Dr. Samuel D. Hopkins, deceased.

Medical Department of City Library.—El Paso County Medical Society is planning to put its library of text-books and periodicals into the public library of Colorado Springs so that the public may have access to this literature.

Charges Graft.—Dr. Elizabeth Cassidy, chairman of the finance committee of the board of commissioners of Denver County, claims that there has been great extravagance or graft in the management of the affairs of the county institutions and is said to have withheld monthly payments until thorough investigation has been made.

GEORGIA

State Society Meeting.—The Medical Association of Georgia will hold its annual meeting in Rome, April 19-21, under the presidency of Dr. Edward C. Davis, Atlanta. The headquarters of the association will be at the Cherokee Hotel, and the business sessions will be held in the superior court room.

State Tuberculosis Camp Opened.—The State Tuberculosis Sanatorium, Alto, was formally opened, March 21. Seven patients immediately availed themselves of the opportunity for treatment. The capacity of the institution is at present seventy, but the buildings have been so constructed that 300 patients can be accommodated at comparatively no additional expense.

District Society Meetings.—At the annual meeting of the Seventh District Medical Society, held in Cartersville, March 9, the following officers were elected: president, Dr. William J. Shaw, Rome; vice-president, Dr. Alfred B. Greene, Cartersville, and secretary-treasurer, Dr. Tanner Lowry, Eucharlee. Cartersville was selected as the next place of meeting.——The Fourth District Medical Society held its annual meeting in Carrollton. Drs. Joseph N. McCormack, Bowling Green, Ky., and Edward C. Davis, Atlanta, president of the state association, delivered addresses, and the following officers were elected: president, Dr. Charles A. Dexter, Columbus; vice-president, Dr. H. J. Goodwin, Roopville, and secretary-treasurer, Dr. Homer Boatright, Carrollton. The next meeting of the society will be held in Greenville, September 19.

Personal.—Dr. S. Wicks Merritt, formerly of Baltimore, has been appointed superintendent of the new tuberculosis sanatorium built by Atlanta and Fulton Counties.——Drs. John F. Harris, William E. Wood, Harlan L. Erwin and Jesse G. McAfee have been appointed members of the board of health of Dalton.——Dr. R. P. Sorrells, Athens, has purchased a large interest in Pine Ridge Sanatorium for Tuberculosis and has been elected secretary-treasurer and business manager of the institution.——Dr. R. J. Horne has been elected a member of the faculty of the Medical College of Georgia, Augusta, and Dr. Noel M. Moore has been reelected a member of the governing board.——The governor has reappointed Dr. Francis M. Ridley, LaGrange, a member of the State Board of Medical Examiners, and Dr. Jarrett W. Palmer, Ailey, a member to succeed Dr. Isham H. Goss, Athens.

ILLINOIS

Personal.—Dr. Harry S. W. Spencer, Kankakee, is reported to be seriously ill with pneumonia.——Dr. George C. Lewis, Fairbury, has retired after thirty years of practice.

Donates a Purse to Missionary.—The Waukegan Physicians' Club has made a liberal contribution which has been given to Dr. Margaret S. Grant who leaves in the early summer for China where she intends to make an exhaustive study of the pneumonic plague.

Legislation.—Senate Bill No. 235 has passed the senate and is now in the house of representatives. There is, apparently, organized opposition against the bill in the house and this is directed toward Section 6-A, which aims to give the State Board of Health jurisdiction in the matter of revocation, over all licenses issued since 1877. Under existing conditions, a physician licensed before July 1, 1899, may deceive and defraud the public, may commit any crime. may even be sent to the penitentiary, and yet remain a licensed physician, as under the decision of the Supreme Court. the State Board of Health has no jurisdiction over licenses issued prior to July 1, 1899. Under these conditions the board is unable to protect the people from the impositions of frauds, quacks, charlatans and impostors, and is rendered impotent in what was intended to be one of its most important functions, namely: "To detect quacks and to prevent them and all ignorant pretenders from imposing on the sick and helpless." The bill does not in any manner increase the requirements now demanded of medical colleges, but is a step in the direction of a higher, better, more practical and more thorough medical education. The bill has been amended so as to provide that a medical college, whose students shall be licensed to practice temporarily in a hospital under the direction of the college, shall require as a prerequisite to graduation, a course of study extending over at least five calendar years.

Chicago

Personal.—Dr. Rosa Engelmann has returned after a year in Europe.——Dr. and Mrs. Arthur R. Reynolds have returned from California.——Dr. and Mrs. Archibald Church and son have returned from Ocean Springs.——Dr. Ernest A. Loewinger was assaulted by unknown persons, April 9, but was not seriously injured.——Dr. Winfield S. Hall has been elected as head of the local branch of the National Health League.

INDIANA

State Conference of Charities.—The twentieth annual state conference of charities and corrections will be held in Indianapolis, October 28-31. Prof. W. G. Weatherly will preside, and the principal addresses will be delivered by Jacob Riis, New York City; Prof. W. H. Bailey, of Cornell University, and Miss Jane Addams, of Hull House, Chicago.

State Red Cross Report.—The Indiana branch of the American Red Cross reports that in the biennium, ended March 24, seventeen cases of tuberculosis among the deserving poor had been treated, at an average expense of $15 a week. These patients were housed in cottages near Danville. Not a single death occurred and cure is expected in all the cases. The association has erected six cottages at South Bend and expects to erect four more in that place, four cottages at Terre Haute, two at Vincennes and six at Indianapolis.

To Benefit Hospital Service.—The late Alfred Burdsall has left his entire estate, amounting to $700,000, to public and charitable institutions of Indianapolis, subject to a life interest for his wife. One-half of the amount is, eventually, to be given to the city board of health for the improvement and benefit of the hospital service of Indianapolis and to provide homes for incurables. His library and $5,000 in cash are bequeathed to the Indiana Tuberculosis Hospital, Rockville, for the erection of a library building, and the remainder of the estate is to be devoted to local charities and the department of public parks of that city.

Health Week at Fort Wayne.—Health week at Fort Wayne was inaugurated March 27, and, during the week, afternoon and evening lectures and demonstrations were held. Samples of tuberculous meats were sent daily from Chicago for demonstration. Among the speakers of the week were Dr. William A. Evans, Health Commissioner of Chicago; G. W. Porter, of the Bureau of Animal Industry of the Department of Agriculture; Dr. W. F. King, Assistant Secretary of the Indiana State Board of Health; Dr. Mazyck P. Ravenel, of the University of Wisconsin; Dr. Alice Hamilton, of Hull House, Chicago; Miss Lenna Cooper, a dietitian of Battle Creek, and Mrs. Caroline Crane, the sanitary expert of Kalamazoo.

Personal.—Dr. James M. Dinnen, Fort Wayne, has been recommissioned as a member of the State Board of Medical Examination and Registration.——Dr. Paul E. Bowers, Indianapolis, has been appointed physician to the northern penitentiary, Michigan City, vice Dr. J. W. Milliken, who has been made deputy warden.——Dr. John H. Alexander and wife, Greensburg, were assaulted and severely beaten by a drunken man, April 2.——Dr. Henry Gers, Washington, state senator, is in a serious condition as the result of a recent cerebral hemorrhage.——In the suit of Dr. Charles F. Cluthe, Evansville, against the Big Four System, in which $35,000 damages were claimed on account of the passing of the railroad through his property, the jury has awarded the plaintiff $1,500.

Violations of Pure Food Law.—During the past two weeks, the following violations of the State Food and Drug Laws have been decided: Three druggists in Indianapolis have been arrested and fined for failing to state the amount of alcohol in paregoric; one druggist in Indianapolis, for selling an impure drug; an individual in Bicknell was fined $25.00 for spitting on the floor in a food institution; in Nappanee a fine was imposed for selling spirits of camphor below the United

States standard; in Hammond, there was a conviction for selling oleomargarine for butter; in Gary, one for selling dirty milk in a dirty container; in Waveland, one for selling apple cider containing benzoate of soda; in La Fontaine, one for selling blackberry cider containing benzoate of soda; and, in Bicknell, the proprietors of an insanitary restaurant and slaughterhouse were fined.

IOWA

County Tuberculosis Hospital.—The Polk County Board of Supervisors has decided to erect a tuberculosis hospital at a site selected on the county farm. The plans provide for the erection of a large tent to accommodate twenty patients, and a permanent building to be used as a kitchen and dining hall for the inmates. During the summer the construction of a permanent hospital will begin. It is stated that residents of Polk County suffering from tuberculosis will be entitled to treatment without charge at the institution.

General Hospitals for Counties.—Two years ago the Iowa legislature passed a bill permitting counties to vote for the levying of a tax to build general hospitals and providing, also, for the erection of separate buildings for the care of tuberculous patients. At the November election eight counties voted on this question, but in only one—Washington County—was the vote successful. A tax of $25,000 was voted and the management was placed in the hands of a board of seven trustees, none of whom is a practitioner. A citizen of Washington donated a site containing 11 acres for the institution, and churches, lodges and private citizens have provided the furnishings.——At a special election, called March 22, Jefferson County voted to establish a general county hospital and voted $27,000 for this purpose. The Washington County hospital is expected to be ready before next winter. The credit for this good work should be given, largely, to the medical men in each county for their united action in the matter.

KANSAS

Personal.—Dr. Benjamin P. Smith, Miltonvale, has succeeded Dr. Chilton W. McLaughlin, Kansas City, as national medical director of the Sons and Daughters of Justice.——Dr. Josaphyne R. E. Davis, Ottawa, who has been under treatment in Kansas City, has returned and resumed her practice.

New Hospital for Kansas City.—The campaign to raise $200,000 for the new Bethany Hospital to be built on Mount Olivet, Kansas City, was started April 2. The territory included in this campaign consists of all of Kansas and all of Missouri south of the Missouri River, comprising the St. Louis conference district of the Methodist Episcopal Church.

Golden Belt Physicians Meet.—At the annual meeting of the Golden Belt Medical Society, held in Salina, April 6, Dr. Leonard S. Steadman, Junction City, was elected president, Dr. R. C. Brown, Kansas City, vice-president; Dr. L. O. Nordstrom, Salina, secretary, and Dr. John W. Neptune, Salina, treasurer. Dr. John G. Sheldon, Kansas City, Mo., conducted a surgical clinic for the society at St. Barnabas Hospital.

LOUISIANA

Personal.—Drs. Ralph O. Hollister, Augustus F. Gates and John L. Robinson have been appointed members of the Board of Health of Hammond.——Dr. Sidney D. Porter, Moreauville, medical inspector of the State Board of Health, has moved to New Orleans.——Dr. Sara Tew Mayo, New Orleans, has been awarded the *New Orleans Picayune* loving-cup which is donated every year to the citizen who shall be declared to have rendered the most signal and unselfish service to the people and best interests of the city.——Dr. Samuel A. Dickson, Shreveport, who has been critically ill is reported to be improved.——Dr. Charles A Schilling has been elected president, and Drs. Marion A. Young and Hartwell A. Eldredge have been made members of the Abbeville Board of Health.——Dr. William L. Grace has been elected president of the Plaquemine Board of Health.——Drs. Robert P. Jones and Tacitus W. Young have been appointed members of the Board of Health of Clinton.

MARYLAND

Baltimore

Operation on Dr. Barker.—Dr. Lewellys F. Barker was operated on for gall-stone disease by Dr. John M. T. Finney, April 10. The appendix was also removed. According to latest reports Dr. Barker is doing well.

Improvement in Marine Hospital.—Extensive improvements are being made in the United States Marine-Hospital. A new system of tuberculosis tents has been installed; a new electric lighting system has been put in operation; interior telephones have been placed and other minor improvements have been made.

Hospitals Benefit.—The Church Home and Infirmary is to receive, under the will of the late Miss Harwood, two-fifths of the estate which is appraised at more than $130,000.——The thirty day "Whirlwind Campaign" to raise $300,000 for additions to Mercy Hospital begins April 10. Cardinal Gibbons is at the head of the advisory board.

Portraits to be Presented.—At the coming meeting of the Medical and Chirurgical Faculty of Maryland, portraits will be presented of the late Dr. Francis Donaldson by Dr. William H. Welch and of Dr. Charles M. Ellis, Elkton, by Dr. Lewellys F. Barker. The annual oration is to be delivered by Dr. George W. Crile, Cleveland, O., and will be followed by a smoker. The scientific session of April 27 will be a joint meeting with the Maryland Pharmaceutical Association and will be addressed by Professor Charles Caspari, Jr., Pure Food Commissioner, and Mr. John B. Thomas of Baltimore.

MASSACHUSETTS

Prominent Dentist Dies.—Edward Walter Branigan, professor of clinical dentistry at the Tufts Medical School and for the past few months its acting dean, a trustee of the Forsyth Dental Infirmary, a member and former president of the National Association of Dental Faculties and a dental member of the American Medical Association, died in Charlesgate Hospital, Cambridge, March 23, from heart disease, aged 35.

New Talitha Cumi home.—The New England Moral Reform Society, which maintains the Talitha Cumi Maternity Home, is marking its seventy-fifth anniversary by the erection of buildings for the home on Forest Hills Avenue, Boston. A tract of 3 acres of land has been secured and the first group of buildings, consisting of the waiting department, the maternity hospital and the foundations and basement of the industrial home, will be erected at a cost of about $62,000. In the waiting department about forty can be accommodated at one time and the hospital can provide for thirty patients.

Personal.—Dr. Louis E. Dionne has been elected chairman and Dr. Albert G. Blodgett secretary of the Board of Health of Ware, and Dr. Harry D. Gafney has been appointed town physician.——Dr. William H. Keleher, Woburn, has been appointed medical examiner of the district comprising Woburn, Winchester, Lexington and Burlington, vice Dr. Harrison G. Blake, Woburn.——Major Frank P. Williams, M.C., N. G., Mass., has been detailed to attend the maneuvers on the Mexican frontier.——Dr. Theobald Smith, professor of comparative pathology in Harvard University, has been appointed visiting professor at the University of Berlin for the second half of the academic year 1911-1912.

Success of the Worcester Movement.—The undertaking inaugurated in Worcester County twenty-eight months ago to attack tuberculosis in wage-earners by an agreement among merchants and manufacturers to provide curative treatment, has resulted in the restoration of the wage-earning ability of more than 200 working people, most of them factory girls. There are at present more than 400 other individuals similarly afflicted, who are undergoing treatment at the expense of their employers, with satisfactory prospect of cure. The movement has now extended throughout New England, has gone as far west as Ohio, and experiments are being made in Japan, Bulgaria, Great Britain, France and elsewhere.

MISSOURI

Sanitarium Burns.—The Moberly Sanitarium was entirely destroyed by fire, March 27, with a loss of $60,000.

Hospital Notes.—The Jane Chinn Hospital, Webb City, was formally opened April 2. This building has been given to Webb City by Mr. and Mrs. C. R. Chinn, at a cost of more than $40,000. The institution will accommodate twenty-three ward patients and ten private patients, and is thoroughly equipped.——The Christian Hospital Association, Kansas City, has completed the pledge of $150,000 made obligatory by the provisions of the gift of R. A. Long who agreed to donate $200,000 for the building and site, provided that $150,000 should be raised as an endowment for a non-sectarian hospital.——An appropriation of $50,000 has been made by Kansas City for the pavilion for tuberculosis patients at Leeds Farm, on which work will be started this spring.

St. Louis

Hospitals Consolidated.—The merger of the Christian Hospital and Centenary Hospital was completed April 1. The new institution will be known as the Christian Centenary Hospital and will be located in the premises at present occupied by the Centenary Hospital. The new institution will be able to accommodate about one hundred patients.

Summer School of Medicine.—The St. Louis University School of Medicine announces that it will establish a summer course of medical instruction, beginning May 30 and continuing until July 8. The course of study will cover both clinical and fundamental branches and is intended to provide facilities for medical graduates who wish to take additional clinical instruction or to review fundamental subjects, and for undergraduates who desire to complete laboratory subjects in advance.

NEBRASKA

Medical Society Meetings.—The Gage County Medical Society, at its annual meeting in Beatrice, April 6, elected Dr. Harry M. Hepperlen, president; Dr. Aleck V. Robinson, vice-president, and Dr. Louis E. Penner, secretary-treasurer, all of Beatrice.——The annual meeting of Burt County Medical Association was held at Tekamah, April 5. The following officers were elected: president, Dr. Cook Craig; vice-president, Dr. S. A. Swenson, Oakland; secretary-treasurer and alternate delegate, Dr. Merrit Wood, Tekamah; censor, Dr. Edgar A. Sears, Decatur, and delegate to the state society, Dr. Andrew D. Nesbit, Tekamah.——Butler County Medical Society, at its annual meeting, held in David City, April 5, adopted resolutions condemning contract practice, and elected the following officers: president, Dr. Thomas J. Vanderhoof, Rising City; vice-president and delegate to the state society, Dr. Edgar D. Banghart, David City; secretary-treasurer and alternate delegate, Dr. Harry E. Marselus, Octavia; censor, Dr. Riley G. Rich, David City.

NEW JERSEY

Fire in Insane Hospital.—Fire set by a patient in the New Jersey State Hospital, Morris Plains, March 21, caused a great deal of excitement, but prompt action by physicians, nurses and attendants prevented any serious damage.

Milk Bill a Law.—Following the public hearing, March 17, on the Meyer milk standard bill, Governor Wilson has approved it, thus making it a law. The bill reduces the quantities of solids required in milk from 12 to 11½ per cent.

Typhoid in State Prison.—Three cases of typhoid fever have been reported in the New Jersey state prison. The health and water department of Trenton will install a chlorid of lime plant to aid in the purification of the city's drinking water until the proposed filtration plant can be completed.

Personal.—Dr. Charles H. Mayhew, Millville, is reported to be seriously ill with diabetes.——Dr. James K. Pollock, Trenton, has been appointed physician of the Southeastern Hospital for Insane, Madison, Ind.——Dr. Thomas E. Dolan has been reelected president, Dr. Joseph Funk elected vice-president and Dr. Theodore F. Livengood, secretary of the staff of Alexian Brothers' Hospital, Elizabeth.

County Society Meeting.—At the annual meeting and banquet of the Morris County Medical Society, held in Dover, the following officers were elected: president, Dr. Theodore W. Bebout, Stirling; vice-president, Dr. Gustav A. Becker, Morristown; secretary, Dr. Henry W. Kice, Wharton; treasurer, Dr. James Douglas, Morristown; permanent delegate, Dr. Abram E. Carpenter, Boonton, and annual delegates to the state medical society, Drs. Clifford Mills, Morristown, and E. Moore Fisher, Morris Plains.

The Widener Home.—P. A. B. Widener of Philadelphia will erect at Longport, near Atlantic City, a summer branch of the Home for Crippled Children, which he maintains in Philadelphia. Last summer he erected several cottages and the children were sent to the shore in groups. The new building will accommodate as many as are cared for in the Philadel-
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NEW YORK

New York City

on for Thoracic Surgery Opened.—The trustees Hospital and Dr. Willy Meyer have announced of a pavilion for thoracic surgery. This ned for inspection April 8.

Babies' Hospital Ready.—The new babies' hospital of the Brooklyn Children's Aid Society is ready for use when the organization opens its Seaside Home at Coney Island for the season on June 20. There are accommodations for 100 patients and all kinds of cases will be taken.

Medical Society Can Try Physician.—The injunction obtained by Dr. Louis A. Ewald, to restrain the county society from trying him on charges of having changed the records of Sydenham Hospital so that it appeared that he had performed more operations than he really had done has been dismissed by the Appellate Division of the Supreme Court, which held that the society had the right to try the physician on the charges.

Control of Venereal Disease.—At a recent meeting of the Board of Health a resolution was adopted which expressed the sense of the Board of Health that the early adoption of a comprehensive plan for the sanitary control of venereal diseases is necessary for the protection of public health and called on the medical advisory board to submit recommendations. The resolution has committed the Board of Health to a definite request that the city erect a public hospital for such diseases.

Lectures for Physicians.—The following lectures will be given in the auditorium of the Educational Alliance on East Broadway: April 9, Dr. Albert A. Berg on "Lodge and Contract Practice"; April 17, Dr. William K. Polk on "Medical Ethics and Their Application to Practice"; April 23, Dr. Joseph Brettauer on "The Secret Division of Fees," and April 27, Dr. Sigismund S. Goldwater on "Abuses of Hospital and Dispensary Practice." These lectures are for physicians only and will begin at 8:30 p. m.

Memorial Meeting to Dr. Janeway.—The regular meeting of the Academy of Medicine on April 6 was devoted to addresses commemorative of the character and work of Dr. Edward G. Janeway. Dr. Francis Delafield spoke of him as the "Physician"; Dr. William H. Welch as the "Pathologist"; Dr. Abraham Jacobi as the "Consultant," and Dr. Joseph D. Bryant as the "Colleague and Friend." It was suggested by several of the speakers that a fitting memorial of Dr. Janeway be placed in the Academy of Medicine.

Buffalo

Increased Salaries in Health Department.—The salary of the health commissioner has been increased to $5,000, and a total of $12,000 a year in increases in salaries has been allowed in the department.

New Buildings for Hospital.—Concerted efforts are being made to raise a fund of $200,000 for the erection of new buildings for the German Deaconess Hospital, and of this amount $40,000 has been subscribed up to date.

City Hospital Site.—The question of a site for the new city hospital is still undecided. An 80-acre tract at West Farm has been offered the city for $225,000, and a tract of the same acreage at the driving park, for $325,000. These offers are still under advisement.

Personal.—Dr. Roswell Park has returned home.——Dr. George B. Stocker has been appointed deputy medical examiner for Erie County.——Dr. John D. Howland has been appointed medical superintendent of the Erie County Hospital.——Dr. Arthur C. Schaefer, assistant health officer, has been appointed a member of the medical staff of the Seventy-Fourth Infantry, N. G., N. Y.

NORTH CAROLINA

Medical Society Moves.—The Buncombe County Society has moved its library and office furniture to the rooms of the Asheville City Health Department and has made arrangements to have the library and reading room kept open constantly.

Personal.—Dr. Peter J. Gorman has been appointed superintendent of the State Hospital for Curable Consumptives, Aberdeen.——Major Eugene B. Glenn, M.C., N.C.N.G., Asheville, has been designated to attend the army maneuvers in Texas and has left for the frontier.——Dr. Hubert A. Royster, Raleigh, has closed a successful campaign for securing $75,000 for the erection of a new Y. M. C. A. building in that city.——Dr. Jacob H. Shuford has begun the erection of a hospital at Hickory.

PENNSYLVANIA

New Members of Board.—Governor Tener sent to the senate, April 3 the following nominations: Drs. Winters D. Hannaker, Meadville, and George A. Knowles of Philadelphia, to be members of the Board of Medical Examiners, representing the Medical Society of Pennsylvania.

County Bulletins.—The twentieth in the series of county papers issued in Pennsylvania is *The Bulletin of the Lancaster City and County Medical Society*. The *Bulletin of the Allegheny County Medical Society* is not only to change from a monthly to a weekly, but is to reach members of medical societies in adjoining counties as well as its own.

Philadelphia

Corinna Borden Keen Research Fellowship.—Graduates of the Jefferson Medical College who may wish to compete in this contest, for which a fund of $1,000 is available, should apply to the dean, Dr. James W. Holland, Walnut and Tenth Streets, Philadelphia.

Fire at Blockley.—The laundry at the Philadelphia General Hospital which was badly damaged by fire on April 6, is already being rebuilt. The damage to the structure is estimated at nearly $200,000. The short-circuiting of an electric mangle is believed to have started the fire.

Quarantined.—The Italian liner *Verona*, with 797 passengers was detained at Lewes, for examination for small-pox. Four men broke quarantine and the Philadelphia police were asked to assist in capturing them. Two were caught and examined by Dr. Andrew A. Cairns, of the board of health, and found to have been vaccinated.

Gift to Hospital.—C. Hartman Kuhn has conveyed the property, 1713 Summer Street, which he recently purchased for $14,250, to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases at Seventeenth and Summers Streets, as a memorial to his father, Hartman Kuhn. It is to be known as the Hartman Kuhn Memorial Building.

Former Foreign University Students' Meeting.—The Spring "Kommers" of the Philadelphia Branch of the Union of Former German University Students now residing in America will be held April 19 at the Hotel Walton. The guests of honor will be the members of the American Gastroenterological Association.

Personal.—Frederick W. Heyl, a druggist, has been appointed special examiner of drugs, medicines and chemicals.——Dr. Alfred Stengel, professor of clinical medicine in the University of Pennsylvania, was made professor of medicine of that institution April 4.——Dr. Henry K. Pancoast, formerly lecturer on skiagraphy at the University of Pennsylvania, has been appointed professor of roentgenology.——Dr. T. Turner Thomas, an associate in surgery, was appointed associate professor of applied anatomy.——Dr. Morris Longstreth will leave next month for a summer in Europe and on his return will make Boston his home.

Tuberculosis Conference.—The first Pennsylvania Conference of Tuberculosis Workers was held April 7 and 8. Dr. Charles J. Hatfield, Philadelphia, president of the Pennsylvania Society for the Prevention and Study of Tuberculosis, presided. The first session considered "A Program for an Antituberculosis Society which Employs no Paid Workers." The function of city, county and state in controlling tuberculosis was also a subject for general discussion and at the closing session, the "Opportunity and Need for Social Service in Antituberculosis Work" was discussed. The educational exhibit of the Pennsylvania society was presented for the visitors' inspection.

WASHINGTON

Protest Against Removal of State School.—At a meeting of the citizens of Medical Lake, a protest was made against the Bassett bill which provides for the removal of the State School for the Feeble-Minded to the west side.

Opposes Publicity.—The Spokane County Medical Society at its March meeting adopted a resolution requesting the lay papers not to publish notices of operations or personal items regarding physicians and their treatment of cases.

Nurses on Strike.—Refusal to grant an increase in wages to the nurses in the King County Hospital, Seattle, resulted in a strike of twelve nurses, which left the 250 patients in the hospital to be cared for by the superintendent and two nurses who declined to join in the strike.

Personal.—Dr. Alexander H. McLeish, Seattle, assistant superintendent at the Western Washington Hospital for the Insane, Fort Steilacoom, has been appointed superintendent of that institution and Dr. Albert C. Stewart, Tacoma, has been appointed the assistant.——Dr. Willis H. Corson, Seattle, has assumed charge of the King County Hospital.——Dr. William M. Newman has been appointed police surgeon of Spokane, vice Dr. John H. O'Shea

WISCONSIN

Counties Would Build Sanatoriums.—Winnebago, La Crosse, Marathon, Eau Claire and Kenosha counties are awaiting the action of the legislature relative to their right to erect sanatoriums for the care of patients with tuberculosis. La Crosse has already appropriated $5,000 for the erection of its sanatorium.

Personal.—Dr. Samuel G. Higgins, Milwaukee, assistant surgeon medical inspector, has resigned.——Dr. Albert J. Pullen has been elected president of North Fond du Lac.——Dr. Mazyck P. Ravenel, Madison, has been appointed by the United States Live Stock Sanitary Commission a member of the committee to investigate hog diseases, and especially hog cholera.——Dr. Frank A. Everhard has been appointed postmaster of Ripon.——Dr. and Mrs. Harry McElwee, Madison, have started for Europe.

GENERAL NEWS

Association on Medical Museums.—The fourth stated meeting of the International Association on Medical Museums was held *in the Auditorium, Chicago*, April 13, under the presidency of Dr. Alfred S. Warthin, Ann Arbor, Mich. The first part of the meeting was devoted to papers, and the second to a symposium discussion of the Experience Bulletin on the preservation of museum specimens in their natural colors, and this was succeeded by demonstrations of specimens and apparatus.

National Tuberculosis Meeting at Denver.—The annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held in Denver June 20 and 21. Members of the American Medical Association may find it convenient to attend the meeting in Denver on their way to the Los Angeles meeting. Denver may be reached by the way of the regular trains previous to the national tuberculosis meeting, and then the special trains provided for the Los Angeles meeting may be joined at Denver or at some other point in Colorado.

Proctologic Program.—The American Proctologic Society will hold its thirteenth annual meeting at Los Angeles, June 26 and 27, with headquarters at the Hotel Alexandria. The preliminary program includes eighteen titles. The subject of the presidential address by Dr. George J. Cook, Indianapolis, will be "Proctologic Recommendations." A symposium is to be held on "Constipation," taking up its etiology, physiology, bacteriology and urinary findings, pathology and diagnosis, sequelæ, including autointoxication, psychotherapy, mechanical, electric treatment and massage, non-surgical and surgical treatment.

Health Report of Philippine Islands.—The eleventh report of the Bureau of Health of the Philippine Islands, presented by Dr. Victor G. Heiser, U. S. P. H. and M.-H. Service, Director of Health, contains the following recommendations for the improvement of the health service of the Philippine Islands: that the legislature enact a law for direct insular control of the Municipal Health Service; that a law for the commitment of the insane be passed; that the Manila charter be so amended that the cost of the abatement of nuisances existing on the property of private individuals, companies or corporations may be assessed against such property and become a prior lien on the same until paid; and that an extensive laboratory and research study of cholera be made with special reference to the influence of bacilli-carriers on the propagation of the disease, and also as to other means by which its perpetuation might be secured.

Annual Meeting of Territorial Association.—The eighth annual meeting of the Philippine Islands Medical Association was held in the amphitheatre of the College of Physicians and Surgeons, Manila, February 22 to 24, under the presidency of Dr. Benito Valdez y Salvadore, Manila. The election of officers was as follows: president, Dr. Robert E. L. Newberne, Manila; vice-presidents, Drs. Henry A. Shaw and Fernando Calderon y Roca, Manila; secretary-treasurer, Dr. Vernon L. Andrews, Manila; and councilors, Drs. Richard P. Strong and Benito Valdez y Salvadore, both of Manila. The presidential address was on "Electricity as a Powerful Therapeutic Agent." Dr. Fernando Calderon y Roca gave an interesting paper on "Infantile Beriberi," illustrated with lantern slides. Each morning before the beginning of the scientific program, a surgical clinic was held in the Philippine General Hospital by Drs. John R. McDill and Hans E. Schiffbauer.

Australasian Medical Congress.—The ninth session of the Australasian Medical Congress is to convene at Sydney, Australia, September 18 to 23, 1911. The meeting is organized under the patronage of the governors of the various states of

Australia, New Zealand and other prominent officials and scientists, and is to have twelve sections, with committees to report on hospital abuse, on contract practice and on syphilis. The secretary is Mr. Arthur Palmer, 121 Bathurst Street, Sydney, Australia.

LONDON LETTER

(From Our Regular Correspondent)

London, April 1, 1911.

Death From Being Blown Into the Air

At Bradford, a girl, aged 16, met death in an extraordinary manner. While in the playground of her school she was caught by a veritable tornado which carried her into the air. When she fell she sustained injuries so severe that she quickly succumbed. At the inquest evidence was given by the assistant school caretaker that the playground is in a very elevated position and that on several occasions he had seen girls blown off their feet but never actually into the air. In his thirteen years' experience he had never seen wind so violent as on the morning of the fatal accident. Another witness who was waiting for a car in front of the school said that he saw the girl in the air, her skirts blown out like a balloon. She was from 25 to 30 feet in the air, just above the school balcony (the latter, the coroner remarked, was 20 feet high). The caretaker said that he had often seen girls blown down in the school-yard and pinned against the wall, and frequently had to assist them into the school. The physician who was called found the girl unconscious and pulseless, suffering from severe concussion of the brain and compound fractures of the lower jaw, right arm, wrist and thigh. It appeared that she was wearing a pair of bloomers with an ordinary skirt but without petticoats. The jury returned a verdict of "died as the result of a fall caused by a sudden gust of wind."

The Decline of Tuberculosis in Scotland

Prof. Matthew Hay, health officer of Aberdeen, states that tuberculosis has been declining in that city for fifty years, although a decline did not begin to be felt in Scotland as a whole until after 1870. It began earlier in towns than in the rural districts. The decline began long before the germ origin of the disease had been demonstrated by Koch, although the infectious character of the disease had never been without believers. A remarkable fact is that the rate of decline was almost as great before sanitary precautions were taken against infection as since they were taken. It was plain, therefore, that the ameliorating agencies had been of a general and not of a specific character. No disease is so amenable to general hygienic conditions as tuberculosis. Eminent authorities have attributed the fall entirely to the increasing segregation of consumptives in institutions. But this applies only to the second half of the period of the decline. It seems extraordinary that the professor in coming so near the explanation of which he was in search as to describe it as a "general ameliorating agency," should have missed it. The period of fifty years to which he refers corresponds with the "free trade" epoch of this country, during which, in consequence of the removal of all taxes from food and all other commodities, an enormous increase has taken place in the prosperity of the people. Cheap food and higher wages were the causes.

Typhoid Traced to Fish Contaminated by Sewage

That typhoid fever may be due to sewage-contaminated shellfish, such as oysters and cockles, is now well-known, but that vertebrate fish may be similarly contaminated is a new theory. Sir Shirely Murphy, the health officer of London, has presented a report confirming the suspicion that has been entertained for ten years that plaice, which is largely supplied in the fried-fish shops, is a cause of typhoid fever. The investigation has been performed by Dr. Hamer, medical officer of the county council for special purposes, and is a remarkable piece of careful work. In the autumn of last year an outbreak of typhoid occurred in the East End of London; about 300 cases were reported from the thirty-third to the forty-second week. Only about 100 could be attributed to the causes ordinarily operative at this time of the year and, therefore, it was inferred that the remaining 200 must have been due to some special cause. The 200 cases showed a tendency to develop in clusters or groups, of which there were thirty-three. Water, milk and mussels were excluded as causes. When more than one case occurred in the same household the dates of onset were within a few days of each other, suggesting that the infection had been introduced into the house at the same time. Among seventy-nine cases occurring in Bethnal Green (a poor East End borough) sixty-eight patients gave a history of having eaten fried fish. Within the month of the onset, and of fifty cases in an area of special prevalence all the persons had eaten fried fish. Within the special area there were twenty-seven fried-fish shops, and of these it was found that three had been specially frequented by the persons attacked. All these shops obtained their supply from the great fish-market of Billingsgate. The fish was plaice and what is known as "late steamer fish," i. e., the cheaper fish which remains after the higher-priced fish has been disposed of. This fish is usually bought by fish friers. In the fish trade of London there is no systematic control by the sanitary authorities, such as is regarded as necessary in the case of other foods, though action has been taken as regards shellfish when they were shown to be a source of typhoid. Plaice appears to be the only fish used by the vendors of fried fish which is not gutted as a matter of course at sea. This is largely due to the fact that as the food of the plaice is largely shellfish it is possible to retain the gut without injuring the fish. In recent years, the practice of gutting plaice is coming into vogue; but, as a rule, no attempt is made to gut small plaice. These are commonly caught in vast numbers in shallow parts near the coast and they sometimes enter tidal waters. The suggestion is made that they become infected by sewage in the estuaries of large rivers.

Severe Epidemic of Measles in London

A severe epidemic of measles has prevailed in London for some weeks and is the cause of nearly 200 deaths weekly. Indeed the records of deaths which extend back for seventy years show that measles has never before caused so many deaths. As measles is not among the diseases which are required to be reported, systematic attempts to deal with it are not possible on the same scale as other infectious diseases, such as scarlet fever and typhoid. The unusual course has been taken of admitting measles patients to the fever hospitals, where there are now 803 cases, but these form only a small fraction of the cases in the metropolis.

Hospitals and Tuberculosis

Measures for the state control of tuberculosis continue to increase. The notification of cases of the disease to the health authorities is not yet universally compulsory but local authorities have the power to make regulations rendering notification compulsory in their districts. In 1908, the government issued regulations providing for the notification of pulmonary tuberculosis occurring among the inmates of poor law institutions, or among persons under the care of district medical officers. An order has now been issued embodying further regulations to provide for the notification of pulmonary tuberculosis occurring among the in-patients or out-patients at hospitals or similar institutions for the treatment of the sick which are supported, wholly or partially, otherwise than by the contributions of the patients.

Bill to Insure Greater Safety in Coal Mining

Recent colliery disasters, particularly the one at Whitehaven, in which, as the result of an explosion, over 300 men perished (previously reported in The Journal), have directed the attention of the government to measures for ensuring greater safety. Mr. Churchill, the Home Secretary, moved in the House of Commons the second reading of a coal mines bill which has been agreed to without a division. He called attention to the fact that a modern colliery with its elaborate plans for getting coal and bringing it to the surface, and for transmitting power for a long distance underground, and for forcing great volumes of air through passages many miles in length is one of the most remarkable examples of human activity. There are employed in the coal mines of the United Kingdom over 1,049,000 persons, of whom 846,000 are employed underground. This accounts for a substantial portion of the whole of the inhabitants of the British Isles. His bill deals with the health and safety of that large number of persons and is the result of a government commission appointed in 1906, and composed of both miners and mine owners, which made a prolonged and exhaustive inquiry into the whole condition of coal mining. The bill also comprises a number of amendments suggested by the government mining officials. It is divided into eight parts: management, safety, health, accidents, regulations, employment, inspection and supplemental. The death-rate from accidents in coal mines, which has been going down for over half a century, ceased to fall five or six years ago and last year there was a grave rise, 1,620 persons being killed in coal mines. The bill deals with all the main causes of accidents. First there are the dangers that arise in the shaft from improper raising and lowering of the cage, or breaking of ropes and chains. These the bill proposes to meet by providing that *no* winding rope shall be used for more than three and one-half years, and that no rope which has been spliced shall ever be used for raising or lowering persons. Overwinding, the cause of many accidents, is provided against by a greatly improved system of controllers and brakes. Another important provision forbids materials and tools being carried at the same time as men are wound up and down. Provisions are also made for ensuring that the shaft is kept in good repair. To prevent accidents from defective signaling there is a provision which secures a uniform system throughout the country. Coming to the ordinary risks to which the miner is exposed, 234 persons were killed last year by accidents connected with hauling or being nipped between the trucks and the walls, or by being run over. The bill requires that adequate space be provided between the walls and the trucks and sufficient refuges prepared. There are various complicated provisions making the hauling of coal less dangerous. The haulage road is too often the reserve alley which is the sewer of the mine by which obnoxious gases escape. The bill provides that there shall be another means of exit, and that in new mines there shall be two inlets, one for haulage and one for traveling. Proper apparatus for extinguishing fires and preventing accumulation of combustible material must be provided. To prevent the danger from falls of earth and coal, to which one-third of fatalties in mines are due, no man shall be allowed to work under an unsupported roof. To prevent the danger of gas explosion no man shall be allowed to work in any part of a mine where there is more than 2.5 per cent. of gas. There is also a provision for compulsory searching for matches. The use of electricity in mines is prohibited where it would be attended with risk.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 31, 1911.

The First Meeting of French Medical Journalists

This recent meeting was organized by the Association des journalistes médicaux français.

The first paper, by Dr. Ausset of Lille, was on the facilities which ought to be given to medical journalists in reporting congresses, etc. Resolutions were passed that summaries of the main addresses ought to be sent to all the journals eight days before the opening of each congress and that medical journalists should be given reduced rates on the railways.

Dr. Dieupart of Paris read a paper on the unauthorized assumption of the title of doctor by writers in the lay press, whose articles usually have an advertising purpose. A resolution was adopted warning editors against self-styled doctors. This resolution will certainly amuse the editors, who divide with such contributors the proceeds of their articles.

A paper was read by Dr. Vitoux of Paris on the unauthorized reproduction of medical articles. There are here medical journals which depend solely on reprinting articles without any authorization whatever, often even without credit. A resolution against the practice was passed.

It is too much to expect that this work will be of much use, since the Association des journalistes médicaux français is far from comprising the editors and publishers of all the most important publications.

Increase of Mortality from Diabetes

At one of the last sessions of the Académie des sciences, Dr. J. Le Goff of Paris called attention to the considerable increase of deaths from diabetes in Paris and in the department of the Seine. According to the *Annuaire statistique de la ville de Paris*, there were in 1880, 128 deaths caused by diabetes, or an average of 0.644 per 10,000 inhabitants; five years later, in 1885, the number of cases had doubled; in 1909 there were 525 or 1.93 per 10,000 inhabitants. Thus in thirteen years the number of deaths due to diabetes has quadrupled. The number of cases of diabetes in Paris has also increased considerably. It may be said, indeed, that formerly many cases of diabetes were not recognized. However, methods of analysis of sugar in urine have not varied for more than fifty years, and even before 1880 the pharmacists ascertained the presence and the amount of glucose by the Fehling method. This argument, therefore, has less value than has been attributed to it. If it be admitted that the number of cases has not varied for thirty years, it must be concluded that the mortality among the patients has quadrupled. Dr. Le Goff believes that the number of diabetics is increasing and the mortality among these patients is likewise increasing. To what should this considerable increase of a disease which was hardly known at the beginning of the last century be attributed? There are several causes. Persons who lead sedentary lives and take no physical exercise are most liable to become diabetics. Moreover, it is a question if the increasing consumption of sugar may not be regarded as one of the causes in the increase of diabetes. In fact, up to the seventeenth century, sugar was considered a medicament and was sold by pharmacists only. In the course of the eighteenth century, saccharose was obtained from the beet. The continental blockade gave a great impulse to the culture of this plant and during the whole of the nineteenth century, the consumption of sugar increased constantly. Thus in 1910, the amount consumed per person was 40.710 kg. in England; 31.4 kg. in America; 26.77 kg. in Switzerland; 19.11 kg. in Germany; 18.97 kg. in the Scandinavian countries; 17.68 kg. in Holland; 15.7 kg. in France, and 12.64 kg. in Belgium. It is in the countries in which the greatest amount of saccharose is consumed that the greatest number of diabetics is found.

Danger to Europe in the Defective Sanitary Condition of Russia

Dr. Lowenthal read a paper before the Académie de médecine on March 28, from which it appears that Russia is the only civilized country where cholera is endemic and epidemic. The epidemic of 1910 caused 130,000 deaths there. Preventable diseases affect one person out of four in Russia and a third of the patients die. In European Russia alone, there are more deaths from epidemic diseases than in the entire population of Europe, not including Turkey, which possesses no statistics. If the medical statistics on Russia and Japan are compared, the latter are seen to be much better, and this observation explains the difference of the sanitary condition of the two armies in the late war. The lamentable condition of Russia was due to the fundamental ignorance among the population, who did not understand the most elementary rules of cleanliness and hygiene. Moreover, while the rural population is entitled to free medical aid, the extent of the territory under the care of a single physician (on an average, 40,000 inhabitants scattered over 7,200 square kilometers or about 34,000 square miles), the distance of hospitals (sometimes by hundreds of kilometers), the absence of railroads, render this medical assistance precarious. Altogether, the sanitary condition of the Russian empire constitutes a permanent danger to Russia herself and a permanent menace for Europe and the entire world.

The Preparatory Schools of Medicine and Their Rôle in Medical Instruction

At the same session, Dr. Motais, professor at the Ecole preparatoire de médecine d'Angers, explained the advantage presented by the preparatory schools of medicine, of which there are twelve in France, at Amiens, Angers, Besançon, Caen, Clermont, Dijon, Grenoble, Limoges, Poitiers, Rheims, Rouen and Tours; there are altogether 641 pupils. Thus, there is no crowding in the ampitheaters of anatomy or the hospitals, consequently, these schools offer more favorable conditions for the first years of medical education than the more crowded scientific centers of the great cities. Professors Blanchard, Guyon, Gariel and Pouchet, of the Faculté de médecine de Paris, like Dr. Motais, believe in these provincial schools. Gariel and Pouchet declare that they have often given examinations in these schools and have observed the superiority of the candidates over the pupils of Paris. Dr. Bertrand, inspector general of the marine sanitary service, emphasized the services rendered by the schools of naval medicine, the suppression of which is demanded each year in parliament.

Reform in Medical Examinations

Up to the present the candidates at the various examinations of the Faculté de médecine were able, by consulting the announcements posted on the walls of the school, to learn at least fifteen days in advance the names of the members of the examining board. It will not be so hereafter, for the counsel of the school has decided that the names of examiners shall be hereafter kept secret. This reform has been undertaken to insure greater impartiality of examinations and to avoid abuse of the recommendations with which some candidates overwhelm the members of their jury, once known. Moreover, certain members of the examining boards, Professors Nicolas and Gariel, for example, who were known to be particularly severe, were avoided, many candidates failing to present themselves to undergo examination when they were to have these examiners. The students are much excited and have taken measures to obtain the reestablishment of the former state of things, but they will receive a categorical refusal.

Personal

At its session of March 28, the Académie de médecine elected a member in the section of pathologic anatomy to replace Professor Raymond, who died last September; Dr. Brault, physician of the Lariboisière Hospital, was chosen. Dr. Brault was one of the most active collaborators of the late Professor Cornil, and has published a number of works, especially on the pathologic anatomy of the kidneys, the liver and the arteries.

The Clinics of Industrial Accidents

In the last general assembly of the Syndicat médical de Paris, Dr. Pelisse read a report on certain so-called clinics of industrial accidents which do not confine themselves to receiving injured working men but employ very dubious expedients to invite such patronage. They are veritable shops with great show-windows decorated in extravagant colors to catch the eye of passersby, reinforced by striking radiographs, and sometimes harboring self-styled lawyers of more or less shady reputation who seek to extort from the insurance companies three or four times what they ought to pay. The most usual method of attracting patronage is to give each injured workman who comes to the clinic for the first time a certain sum of money. Another is to give a premium to everyone who brings there an injured workman.

After hearing Dr. Pelisse's report, the *syndicat* resolved that the attempt to attract victims of industrial accidents was reprehensible and unprofessional, and that every physician convicted of using such means should be excluded from professional societies.

Present Condition and Enlargement of the Beyrouth Medical School

In 1881 the French government and the superior of the Jesuit mission in Syria came to an understanding which resulted in the creation of the Faculté catholique et française de médecine et de pharmacie de Beyrouth. It was agreed that the Jesuits should have the direction and administration of the institution and that an annual allowance from the French government should guarantee the payment of the salaries of the professors and the maintenance of the laboratories and the library.

The diplomas are delivered and the control is assured by professors sent from France each year. The courses opened in 1883. The buildings, the teaching body and the equipment of the laboratories were planned for a maximum of sixty students, which no one anticipated would be exceeded in the future.

The school, however, has undergone considerable development. To-day, after twenty-seven years of existence, it has more than 250 students and, consequently, the buildings, equipment and faculty and, especially, the hospital facilities, are entirely inadequate. The administrators therefore have planned (1) to construct new buildings large enough to give 400 pupils the best and most modern medical instruction, and (2) to provide the hospital needed by the school with a sufficient number of beds for the general clinics of medicine and surgery and special services for children's diseases, cutaneous diseases, syphilis, diseases of the eye and an isolation pavilion for contagious diseases. The construction and installation of the new buildings will be undertaken by the school at its own expense; but it will be unable to do more. It therefore appeals for means to construct the hospital to the French government, which will probably respond favorably and will retain the control of the school.

Large Bequests to Scientific Institutions

In France, unlike the United States, scientific institutions are rarely aided by private gifts and bequests from rich men. A strong impression has, therefore, been created by the will of M. Loutreuil, a rich manufacturer who recently died leaving the greater part of his fortune to science. M. Loutreuil bequeathed $20,000 (100,000 francs) to the Institut Pasteur; $200,000 (1,000,000 francs) to the Caisse des recherches scientifiques; $500,000 (2,500.000 francs) to the Université de Paris. Moreover, desiring to contribute to the progress of the sciences taught or studied by scientists and independent investigators in other institutions of higher scientific culture, and being impressed by the meagerness of their resources in comparison with what they have in other countries, M Loutreuil bequeathed $700.000 (3.500.000 francs) to the Académie des sciences, to be distributed to the best advantage.

BERLIN LETTER

(*From Our Regular Correspondent*)

Berlin, March 24, 1911.

Personal

Professor Lucae, formerly for many years director of the ear clinic in Berlin, died March 17, at the age of 76. In view of the present demand from many sources in Germany for a combination of otology and laryngology, it is of historic interest that Lucae in his thesis for the doctorate took as his theme the "Technic and Importance of the Laryngoscope Introduced into Medical Practice in the Year 1858." He entered his special field at the suggestion of Virchow. After he had worked in Vienna, chiefly with Politzer, and in London with Toynbee, he continued his studies in Berlin and became connected with the faculty here in 1866. He soon founded a policlinic for ear diseases, and in 1881 an otologic clinic. Lucae made important contributions to all departments of otology, of which his treatises on the origin and foundation of the subjective sense of hearing and the importance of sound conduction by the bones of the head are worthy of special notice. In his work he was materially aided by his unusual musical talent. Some years before his death he retired from his official position, but still took an active part in the transactions of the Berlin Otologic Society.

Berlin otology has suffered another loss in the removal from the city of the well-known Professor Hartmann, who has retired to his native place, Heidenheim in Würtemburg. As an evidence of the esteem and popularity which Hartmann has enjoyed in Berlin, a banquet was given in his honor.

Professor Busse of Posen has recently accepted a call as successor of Professor Schmidt in the chair of pathologic anatomy at Zurich.

The Berlin Medical Society on the Vaccination Law

As I mentioned in a previous letter, a motion has lately been introduced and discussed in the Reichstag to the effect that a conscience clause with regard to vaccination should be introduced, similar to that in force in England, namely, that anyone who shall declare to the judge that vaccination is contrary to his conscientious belief, shall not be compelled to have his child vaccinated. Correctly estimating the danger which this clause would bring to the vaccination law, the Berlin medical society at its last session adopted a resolution proposed by the well-known pediatrist, Professor Baginsky, which reads: "In view of the latest discussion in the Reichstag, the Berlin Medical Society declares its conviction that it is absolutely necessary to maintain the German vaccination law of April, 1874, intact, and that especially the introduction of the English conscience clause would be attended with the gravest danger to the German people." It is remarkable that none of the antivaccination physicians, who have formed themselves into a special society, were present at this meeting. The resolution was adopted unanimously without debate. To this antivaccination medical society, as a matter of course, belong only members who have always opposed the so-calle "school medicine," and are partisans of the *Naturheilmetho* or Nature cures. Presumably, they hope to do better busin in this way.

Suicide in Prussia

Suicides increased in Prussia in 1909. There were 8,422 persons who took their own lives, as compared with 8,231 in 1908. Among these there were 6,466 men (in 1908, 6,371) and 1.956 (1,860) women. There were 21.6 suicides per 100.000, as compared with 21.4 in 1908, 20.2 in 1907 and 19.5 in 1906. The relative number of men was 33.6 (in the previous year 33.5), and of women 9.9 (9.6). The increase was much more marked among women than among men. There is a relative increase of suicide with advancing age. Among 100,000 persons from 10 to 15 years of age there were 1.7 (in 1908, 0.7) suicides; from 15 to 20, 16.9 (15.0); from 20 to 25, 27.3 (26.2); from 25 to 30, 20.7 (20.4); from 30 to 40, 24.2 (24.9); from 40 to 50, 37.4 (39.2); from 50 to 60, 59.9 (55.1); from 60 to 70, 56.3 (56.6); from 70 to 80, 55.8 (61.0); from 80 to 90, 54.1 (55.7). It may readily be seen from the figures that the number of youthful suicides has markedly increased since 1909. Indeed, while we find this increase in the period from 10 to 15 years in which with the small absolute number a few cases more or less may occasion a remarkable change in the relative figures, we find also that in the period of from 15 to 20 and from 20 to 25 years, where the numbers are larger, the relative figures are larger than they have been in any previous year. In accomplishing self-murder, hanging plays the principal rôle; 56.1 per cent. of men and 38.1 per cent. of women suicides hung themselves;

11.4 and 28.8 per cent., respectively, drowned themselves; 20.2 and 3.2 per cent. shot themselves, and 6.1 and 19.3 per cent. took poison. Poisoning and drowning, together with jumping from a height, are the modes of suicide more frequently selected by the female sex than by the male, while, on the other hand, six times as many men as women end their lives by shooting.

Thirty-Second Congress of Balneology at Berlin

RADIUM IN THERAPEUTICS

The importance of radium in therapeutics formed an especial subject of discussion at the thirty-second congress of balneology held in Berlin, March 2 to 6. The well-known physicist, Professor Marckwald, treated the subject from the physico-chemical standpoint. Of the three kinds of rays produced by radium, the alpha rays possess no power of penetration, the beta rays are cathode rays and have considerable penetrating power, while the gamma rays, which are similar to the Roentgen rays, have the greatest penetrating power. Radio-active elements are such as are in constant process of destruction. The most important forms of radium, especially with reference to balneology, are those which have the shortest life period. Dry radium salts give off no emanations, but they may become a source of emanations if one simply breathes on them. There are two radio-active families, those derived from uranium, and those from thorium. The former yield short-lived decomposition products or emanations, the latter long-lived; therefore, the uranium products are of greater therapeutic importance. Heretofore not enough attention has been given to the decomposition products in the measurements. The estimation of springs for their radio-active value should not be undertaken until after three or four hours. In conclusion, the speaker emphasized the necessity for a single and international standard of unit of measurement for radium. Kionka, professor of pharmacology in Jena, who has made a special study of radium, described its importance from a biologic and therapeutic standpoint. The tissues are markedly affected by radium, so that all forms of tissue irritation from simple reddening to necrosis can be produced on the skin.

RADIUM IN TREATMENT OF GOUT AND RHEUMATISM

The influence of radium on uric acid is therapeutically important, Kionka continued, as radium converts this substance from an almost insoluble into an easily soluble form. Further, under the influence of the emanations the purin metabolism is accelerated. These two properties of radium are of the greatest importance in the treatment of gout. The emanations seem to have no special affinity for blood, like that of oxygen for hemoglobin. The best form of introduction of radium is by inhalation, as the radium also leaves the body with the expired air. Drinking and bathing in radio-active water seem to be likewise effective, but far less than the inhalations. The strongest radio-active springs known to date are those at Landeck, Johannisthal and Gastein.

Dr. Fürstenberg, assistant at the university hydrotherapeutic institute, named as the chief indications for radium, gout and rheumatism. He has noted a hypnotic action of the emanation and a temporary slight increase in the body temperature. A Kreuznach physician, Dr. Eichholz, opposed the general view of the advantage of the inhalation method over the method of drinking. Dr. Ruhemann, a Berlin physician, has had radio-active biscuits made by incorporating a solution of 1.000 or 1,500 units of radio-active salts in zwieback, in which they could be demonstrated for three months. It was asserted by Dr. Plesch, an assistant of Professor Kraus, that the blood-pressure sinks in the emanatorium, during inhalation of the emanations, and that the emanation behaves in the blood as an indifferent gas. This gas is absorbed only to a very slight extent from the intestine, and does not reach the arterial blood, as it is immediately excreted by the lungs.

CARBONATED BATHS

Professor Goldscheider, the present director of the university policlinic for internal medicine, presented a communication on the action of carbonic-acid baths. He opposes the explanation of the action of carbonic-acid baths given by Senator and Frankenhäuser, as this theory does not take into consideration the action of carbonic acid on the nerve terminals, which has been discovered experimentally by him. Carbonic acid acts chemically as a gas on the endings of the thermal nerves and hinders the escape of heat from the skin. In the carbonic-acid bath the conditions are such that the water first affects the skin and withdraws heat from the body; then here and there bubbles of carbonic-acid gas take the place of the water, but do not remove so much heat from the skin. A certain contrast of temperature thus arises. But now the bubbles of carbonic-acid gas do not lie directly on the skin, but there remains between the skin and the carbon dioxid bubble a very thin layer of water, which is of very great importance for the whole question. If the Senator-Frankenhäuser theory was correct, an air bath would be similar in its action to a carbonic-acid bath. But this is not the case. The carbonic-acid baths have a peculiar action depending on the chemical properties of carbonic acid.

BRIEF HOT PLUNGE BATHS

Privat-Docent Dr. Determann, the well-known director of the sanatorium at St. Blasien, discussed hot plunge baths. Hot plunge baths at the temperature of 37 to 45 C. (98 to 113 F.) produce a marked stimulation of the functions of the organism, and most of all increase the capacity for muscular exertion. The physiologic action of hot baths of longer duration is thereby avoided. In the short hot plunge bath there occurs first a severe terrifying sense of pain, with a brief pallor of the skin, which is rapidly followed by hyperemia. The reaction in the hot bath follows without any active effort; patients have never taken cold after the hot plunge bath. These brief hot plunge baths are indicated in spinal neurasthenia, in certain forms of asthma in young people, and in conditions of peripheral irritation and pain, such as neuralgias, especially those on a hysterical basis.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, March 23, 1911.

Care of the Teeth of Schoolchildren

A movement has recently been initiated in this country, as in England and America, to have the teeth of schoolchildren cared for. A preliminary report by a committee authorized to make investigation showed that fully 80 per cent. of the large number of children examined had defective teeth. In our country we have compulsory elementary teaching; therefore all Austrian children between 6 and 14 years of age, except a very few, who are educated at home and have to pass their examinations in the public schools, may be found in the schools. These distressing data have suggested the formation in Vienna of a society for the care of the teeth of schoolchildren (Gesellschaft für Schulzahnpflege), whose aims are endorsed by the government and teachers as well as by the professors. Within a few weeks, many hundreds of members have been recruited, and the society has taken up its work. No treatment is given in the schools. The teeth of the children will be examined in each school periodically (every four or six months) and those found defective will be marked out. The parents will be informed of the result of the examination, and for those who are really poor, certain dentist surgeons have consented to perform the necessary dental operations free of charge. The teacher of each class will be authorized to see if the recommendations of the dental expert have been observed by the parents or the child. It is intended to have instructive lectures on the importance of healthy teeth, delivered twice a year in each class before the children, and also to award small prizes to those who, at the end of the term, have normal healthy conditions in the mouth.

Appointment of Professors to the Vacant Clinics

As has been mentioned in a previous letter, those two men who have been considered as being the most acceptable candidates, have been appointed ordinary professors in the Vienna medical faculty: Professor Ortner from Innsbruck who will succeed Strümpell as chief of the third medical clinic, and Professor Chvostek, who will be made head of a new, fourth, medical clinic. The latter clinic is a necessity, since the number of students and also patients has lately increased to such a degree that the old clinics have become absolutely inadequate. The fourth clinic will open at the beginning of the winter term in October. Another vacancy is to be filled, that after Escherich. The medical faculty of the Vienna University has nominated as its candidates, Professor von Pirquet (who is at present in Breslau and was for some time in the United States), Professor Pfaundler, and Docent Dr. Hamburger of Vienna, in the order mentioned. All these men are Escherich's pupils and there is no doubt that the first-named physician will be appointed, while probably the third will be called to take a prominent place in a German university town.

Combating the Smoke and Dust Nuisance

On account of the increased traffic in and growing industrialization of this city, the amount of dust and smoke has become an unwelcome feature in Vienna. Especially the dust is a bad nuisance here. We have a large proportion of windy days, hardly more than 27 days out of 365 without wind. The material with which the streets are paved is a kind of granite, which is quickly ground into fine sharp dust under the stress of street traffic. These two circumstances have been for a long time held responsible for the frequency of tuberculosis in Vienna, but all the efforts of physicians to procure a more healthful or scientific pavement have hitherto been fruitless. At last, a large and very influential association has been formed consisting of high officials of the state, of physicians, bankers and industrial men. This society has already succeeded in inducing the local municipal corporation to pave all new streets with a special non-dust-producing asphalt, while the old streets will be gradually converted also into asphalt streets. Furthermore, throwing dust out of the windows into the streets has been prohibited now by order of the police. The collection of household refuse, hitherto a fruitful source of most dangerous dust-clouds, has been made the object of a very thorough investigation, and several methods of dust-free collection are at present on trial. The society also fights the smoke nuisance. It has in this line two very encouraging results, for an amendment to the new building act of the city requires the installation of smoke-destroying apparatus in all new houses built after July 1, 1911, and the gradual installation of such in all factories within the precincts of Vienna up till 1913.

Miscellany

Vaccination Effective in the Philippines.—Another timely contribution to the value of vaccination is found in the report on small-pox and vaccination in the Philippine Islands by Dr. Victor G. Heiser, Director of Health in the Philippines, which was referred to editorially April 8, 1911, p. 1041. Dr. Heiser's report follows: During December a person afflicted with small-pox was transferred from San José, Antique, to the Island of Caluya, which is a small isolated island south of Mindoro, the inhabitants of which have heretofore not been systematically vaccinated. An old woman took some of the contents of a pustule from the small-pox case shortly before death and vaccinated a number of the inhabitants. Small-pox in epidemic form soon resulted. The population of Caluya and nearby islands is about 2.000. Approximately, 1,000 cases of small-pox occurred before the facts became known to the outer world. Vaccinators properly equipped were immediately sent to Caluya. They vaccinated 800 of the remaining 1,000 persons. Of these, not one contracted small-pox who had a successful vaccination that was 2 weeks old. Dr. Victor G. Heiser, Chief Quarantine Officer, visited ten families, with from five to eight members. In six of these, every member was stricken with small-pox. Physical examination showed that they had no vaccination marks. In two other families six persons were stricken and two escaped. Physical examination showed that of the six stricken members not one had been vaccinated. The two remaining members had successful vaccination marks. On inquiry, it was learned that they had visited Calapan a year previously and were vaccinated while there. In two other families that lived in the midst of a small-pox-stricken village, there were no cases of small-pox. Examination showed that they had good vaccination scars. Further inquiry elicited the statement that they had but recently come from another island where they had been vaccinated. In one house, one person was found with varioloid. On inquiry, it was learned that he had been vaccinated during childhood. Net result: Community of 2.000 population; 1,000 unvaccinated persons contract small-pox; 400 die; 800 are protected by vaccination; no cases occur after the incubation period was passed; no deaths occur. The remaining 200 are semicivilized and fled from the vaccinators, and their condition is unknown.

Morphologic Changes in a Mouse Carcinoma.—A systematic microscopic study was made by R. Kilduffe of the different generations of a carcinoma transplanted into white mice. The original tumor had developed spontaneously in a mouse. The sections studied covered a period of experimentation with the tumor extending from March, 1907, to June, 1910, and comprised all generations produced in that time. The sections were divided into four groups according to the history of the tumor. (a) Sections of the original tumor transplanted without experimental interference or modification, "the unheated series." (b) Sections of the tumor which had been heated to 44 C. for varying periods of time before inoculation through successive generations, "the long-heated series." (c) Sections of the tumor which had been heated before inoculation for varying periods of time as in (b), but through a shorter number of generations, "the short-heated series." (d) Sections of tumors, of which some generations had been heated for varying lengths of time, and other generations had not been heated, "the mixed series." The object of this investigation was to determine what changes in the morphologic character, if any, took place as a result of the various manipulations to which the tumor had been subjected before inoculation. This tumor was but slightly, if at all, affected morphologically by the experimental manipulations to which it was subjected, for no permanent morphologic change was produced through the influence of the physically injurious conditions to which it was exposed before inoculation. Kilduffe emphasizes the fact that the experimentally produced decrease in the energy of growth of these tumors did not change the alveolar character to an acinous one. A return to an adenomatous structure, described as a result of weakening tumor growth through transplantation into resistant animals, was not observed after a direct weakening of the growth through the influence of physical agencies.—*Journal of Experimental Medicine.*

Liver Necrosis of Chloroform Poisoning.—G. H. Whipple and S. H. Hurwitz, in the *Journal of Experimental Medicine*, report experiments on dogs and summarize their results as follows: Chloroform anesthesia for two hours or more will cause more or less central liver necrosis in dogs, depending on the length of the anesthesia and the susceptibility of the animal. If the fibrinogen of the blood of such an animal be estimated at intervals, it is found that this proteid shows a drop corresponding to the amount of liver necrosis. By administering chloroform, the fibrinogen may be almost eliminated from the circulating blood, and the poisoned animal may bleed for hours from small skin pricks or cuts. The liver can recover from a grave injury due to chloroform and return practically to a normal condition in about ten days. The fibrinogen reappears in the blood as the liver effects its repair. It seems that the quantity of fibrinogen present is a good indicator of the liver efficiency and a fairly accurate index of the amount of liver injury. Shortly after the recovery of the liver from an injury due to chloroform, one may find an excess of fibrinogen in the blood. In severe cases of chloroform poisoning, the calcium of the blood was normal or slightly increased, and the thrombin was normal. These experiments give no evidence that the formation of thrombin or prothrombin is dependent on liver activity. The hemorrhages of chloroform poisoning are due not to lack of blood clotting but to inefficient coagulation. The clot has not the body and toughness supplied by the fibrinogen, and is, therefore, unable to check even capillary hemorrhage. Fibrinogen is either formed in the liver or is wholly dependent on liver activity for its production.

Effects of Mechanical Agitation on Complement.—Under certain conditions, according to H. Noguchi and J. Bronfenbrenner, mechanical agitation destroys the complementary activity of guinea-pig serum. It is most injurious when carried out constantly at a temperature of 37 C., but it is extremely insignificant at 10 C. After the first few hours at 37 C., the destruction of complement proceeded much more rapidly, and after six hours it was almost complete. On the other hand, within one hour, shaking had almost no destructive effect on complement, even at 37 C. From this we may conclude that the several shakings which are necessary for fixation experiments during incubation do not modify perceptibly the outcome of the reactions. The rate of destruction of the complement of guinea-pig serum at temperature above 45 C. is progressively greater as it approaches 55 C., at which temperature the activity is reduced in thirty minutes to from one-thirtieth to one-fortieth of the original strength of the unheated serum; but it is not completely destroyed, as is commonly assumed. The velocity of destruction of guinea-pig complement when exposed to 55 C. for various lengths of time is found to be quite irregular, and not proportional to the length of time. This irregularity, however, presents a certain rhythm, a period of greater destruction alternating with one of less destruction.—*Journal of Experimental Medicine.*

Mercury Bichlorid and Serodiagnosis of Syphilis.—H. Noguchi and J. Bronfenbrenner have made experiments to ascertain what effects a soluble mercurial preparation will have on the syphilitic antibody *in vitro*. As a mercurial preparation, they chose mercury bichlorid; and for the fixation test, the system of Noguchi. The effect of bichlorid of mercury was determined on (1) red blood-corpuscles, (2) complement, (3) antihuman amboceptor (rabbit), (4) syphilitic antigen (acetone insoluble tissue lipoids of human liver), and (5) syphilitic antibody. The hemolytic power of bichlorid of mercury was considerably reduced by mixing it with 0.05 c.c. of guinea-pig complement or with two units of the amboceptor serum on paper, but was not noticeably diminished by the antigen, which was used in doses of 0.0003 gram. It has no anticomplementary effect. On the contrary, the hemolysis was more complete and proceeded more rapidly in its presence. This is due to the injurious effect of bichlorid of mercury on the corpuscles, thus reducing the corpuscular resistance to the hemolytic action brought about by the complement and amboceptor. In the highest non-hemolytic quantity (0.0000025 gram) bichlorid failed to remove, to a noticeable degree, the syphilitic antibody, and the reaction in two strongly positive sera remained unchanged.—*Journal of Experimental Medicine.*

Neurasthenia in Children.—The "nervous," or "neurotic" child is, like the poet, "born and not made." He is often the child of neurotic stock, or his origin may be traced to alcoholism, tuberculosis, ill-health or poverty in the parent. Neurotics generally abound in families in which great ability or genius predominate, but also in those in which insanity, epilepsy and other neuroses are found. According to Riviere, in the *Practitioner*, the hall-mark of the "neurotic" seems to be an over-development of the emotional faculties; at the other end of the scale stands the unemotional type," and necessarily all grades exist between these two extremes, so that the term neurotic may be qualified by "more" or "less," and, save in its higher grades, its possession may confer a blessing rather than a curse. To the higher grades of neurotic inheritance, however, a curse and a stigma attaches, and the penalty in sorrow and suffering greatly outweighs the reward, especially in childish years before the judgment comes into play.

Prognosis of Cerebrospinal Syphilis.—The prognosis of cerebrospinal syphilis is in general a serious one, owing to the frequency with which it resists treatment, and to the pronounced tendency to late recurrences and grave complications. Various factors affect the outlook. For instance, this is worse in cases in which the onset of the disease is many years after the infection, or in which other diseases or cachexias are present, particularly tuberculosis and alcoholism; it seems to be worse also in cases in which the early manifestations of syphilis were slight. Unfortunately there is not much reason to believe that thorough treatment in the early stages is a satisfactory guarantee against the later occurrence of cerebrospinal syphilis, but on the other hand energetic treatment at the onset of this certainly has an important influence on the course it will run.—E. Jones, in *Interstate Medical Journal.*

Cancer Investigation.—Experiment is rapidly advancing toward a stage at which the nature of cancer will be made clear, the influence of heredity, and of external factors, e. g., of all chronic irritants, defined; but a means of cure is not yet in sight. The only hope for the cancer patient still lies at present in the general practitioner being so suspicious of all lumps which cannot be explained that he will urge their removal as early as possible, and have them carefully examined by skilled microscopists. Here I would enter a protest against the snipping out of a little piece for diagnostic purposes, for experiment has shown how great is the danger of dissemination of cancer cells in the individual where they are "at home;" however difficult it may be to effect the transference of a cancer from one mouse, rat, rabbit or dog to another, the attempt always succeeds if the same individual be inoculated with his own tumor.—E. F. Bashford in the *Practitioner.*

Injection of Air in Treatment of Sciatica.—F. Ramond and his associates recently reported at the meeting of the Paris Société des Hôpitaux the results of different methods of treatment of sciatica as applied in sixty-five cases. Hypodermic injections of sterilized air were applied in thirty-three cases at the points where the pain was most intense, sometimes at the emerging point of the nerve, in the middle of the thigh, in the calf and occasionally a fourth injection at the sacro-iliac articulation. He injects about two-thirds of a liter of air at each point into the subcutaneous tissue, thus making a continuous emphysema from buttocks to ankle. The air is injected slowly and the relief from pain is immediate and usually constant; the pain returns, however, after eight or ten hours in the unsuccessful cases. The cure was permanent in four of the ten cases rebellious to other measures, and in thirteen of the twenty-three cases in which this was the first measure applied; four other patients were materially improved. A glass tube containing a little cotton is interposed in the rubber tube and bulb connected with the Pravaz needle. The only danger from this treatment is the possibility of air embolism, but this has never occurred, and it is easily prevented by injecting a little salt solution beforehand. If a little edema forms, this shows that the fluid has not entered a vein. The absence of blood if the syringe is pumped also shows that no vein has been entered. Ramond's conclusions from his experience with sciatica are that one method may succeed when all others fail, and that each should be given a trial.

Hematoma of the Adrenal Body.—This unusual case is reported by Case (*Proc. Path. Soc., Philadelphia*, December, 1910, p. 258), in a negress, aged 63, who was admitted to the Philadelphia General Hospital Dec. 29, 1909, and died Jan. 8, 1910. She suffered, while in the hospital, with mitral regurgitation, aphasia, paralysis of the left arm and incontinence of urine and feces. The most interesting finding at autopsy was the left adrenal which was about the size of a goose egg. It was dark red in color, with here and there patches of yellow, much divided and separated cortex, showing beneath the capsule. This enlargement involved approximately two-thirds of the organ, and was due to a comparatively old hemorrhage into the medulla, with here and there areas of fresh blood-clot. In addition, the microscope revealed a moderate proliferation of connective tissue about the clot, with thickening of the capsule. The kidney was arteriosclerotic and the aorta atheromatous.

Humidity in the Problem of Ventilation.—Air is more essential to life than food; good air is as essential as good food, and plenty of air has the same merit as plenty of food, says D. D. Kimball (*Annals American Academy of Political and Social Science*, March, 1911). In the process of respiration, oxygen is reduced in amount while the carbonic acid and water vapor are largely increased. Neither water vapor nor the carbonic acid, due to respiration, is injurious; but as an increase of carbonic acid in the air of an apartment is usually accompanied by a decrease in the amount of oxygen and an increase of water vapor, the percentage of carbonic acid is an index of the quality of the air. Apparently it is not altogether the chemistry of the air but its temperature, humidity, motion and, possibly, other physical properties unknown, which are the attractive features of outdoor air. It is becoming generally believed that when air contains a normal proportion of oxygen its temperature and humidity are of greater importance than the absence of carbonic acid. The proper control of the temperature of a room is not only conducive to health and comfort, but means a substantial saving in fuel. Headaches, dizziness, sickness, etc. are often symptoms of bodily heat retention due, chiefly, to high room temperature and lack of humidity. The relative humidity of outdoor air at other times than during storms varies from 50 to 80 per cent, and in the most arid desert is rarely as low as 30 per

Herbert Franklin Brethour, M.D. University of Toronto, 1899; of Hamilton, Mont.; died in a hospital in Butte, Mont., March 28, from septicemia, aged 34.

Arthur L. Kendall, M.D. McGill University, Montreal, 1901; of Vancouver, B. C.; died in the Vancouver General Hospital, Oct. 8, 1910, from typhoid fever.

Cain C. Godshaw, M.D. University of Louisville, Ky., 1874; fell from the window of his office in Louisville, April 3, and was instantly killed, aged 55.

Joseph B. Allen (license, Iowa, years of practice, 1886); a practitioner for sixty-five years; died at his home in Hillsboro, Ia., April 7, aged 88.

Lucius D. Huffman, M.D. Jefferson Medical College, 1885; died at his home in Covington, Ky., March 24, from chronic myocarditis, aged 56.

Samuel P. Goudy, M.D. Columbus (O.), Medical College, 1881; died at his home in Jamestown, Pa., March 17, aged 63.

Ingraham Bill Freeman, M.D. Jefferson Medical College, 1856; died at his home in Bridgetown, N. S., February 27.

Alexander C. Scott, M.D. Savannah (Ga.) Medical College, 1867; died at his home in Jacksonville, Fla., March 11.

Gideon Barnaby, M.D., Harvard Medical School, 1872; died at his home in Granville Ferry, N. S., January 10.

J. S. Wilson, M.D. Kentucky School of Medicine, Louisville, 1879; of Macy, Ind.; died at Peru, Ind., March 10.

Franklin Winger, M.D. Jefferson Medical College, 1886; died at his home in Ephrata, Pa., March 15, aged 47.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

BENETOL

During the last few months sensational and ridiculously misleading articles have appeared in the daily press regarding a proprietary preparation called Benetol. The nostrum seems to be advertised by the direct method only to physicians; to the public it goes via the special newspaper article route, as a "marvelous medical discovery." It is but fair to say in this connection, that the newspapers which have published these articles seem to have done so in good faith and in total ignorance of the fact that they were giving the Benetol Company a large amount of free advertising. It is evident that the press agent's work was well done.

Here are a few claims that are made, either to the medical profession or to the public, for Benetol:

> "A new germicidal antiseptic marvel."
> "The only safe germicidal antiseptic."
> "It will cure any germ trouble it can reach."
> "Is beneficial rather than dangerous in overdoses."
> "The only germicide that can follow and kill germs."
> "A laboratory product of the University of Minnesota."
> "A chemical which destroys the germs of tuberculosis, typhoid and cancer."
> "Ten drops allowed to remain a short time in a gallon of infected water will make the water not only safe to drink, but will make it beneficial as a medicated water."

In the newspaper write-ups on Benetol, its discoverer is given about the same degree of publicity as the drug. Benetol is said to have been "dicovered" by "Prof. H. C. Carel, Head of the Department of Medical Chemistry and Toxicology, University of Minnesota (Retired)."

In many of the newspaper articles it is implied that Carel is still a member of the faculty of the University of Minnesota. The facts are, Carel has not been connected with this institution for some years. His connection with the university ceased at the time he exploited a hair restorer—"Hygenol." In selling his cure for baldness, he attempted then, as he is attempting now, to make capital out of the good name of the university—and the board of regents saw to it that Carel's connection with the university was severed. The attempt, therefore, to exploit Benetol as "a laboratory product of the University of Minnesota," is both an outrage on an institution of learning and a fraud on the purchaser.

In one of the *press-agent notices* on Benetol, the claim is made that the War Department has investigated Carel's "New Discovery" and that the heads of the department have *urged the government* to secure the "sole information and ownership" of Benetol. As a clincher it goes on to say:

> "An emissary is being sent to Prof. Carel to enter into negotiations, and for the first time in its history the United States government may go into the germicide business."

An inquiry at the War Department, regarding the veracity of the statements given in the exploitation of Benetol, brought the following statement from the office of the surgeon-general:

> "As you have surmised, there is no foundation of truth in the statement which you inclose with reference to the use of 'Benetol' by the medical department of the Army. This office has not authorized the purchase of any 'Benetol' nor has it investigated its merits."

DEATH TO GERMS, LIFE TO HUMAN BEINGS

Greatly reduced photographic reproduction of a full-page newspaper write-up of Benetol. Under the portrait of the "inventor" of Benetol appears the statement "Prof. Herbert Charles Von Fuerstenburg Carel, of the University of Minnesota, the inventor of Benetol." This write-up appeared in the Philadelphia North American, a paper that treats "patent medicine" fakers with scant courtesy. It was the appearance of such an article in a paper of this type that caused us to investigate the method by which the exploiters of Benetol got their product into the newspapers in this form.

Nor was the army alone the only department of the government that was credited with waxing enthusiastic over Carel's nostrum. It was claimed that the stuff had been tested in the navy. An inquiry addressed to the Bureau of Medicine and Surgery of the Department of the Navy brought the following statement:

> "This Bureau has never issued 'Benetol' for use in the Navy and does not contemplate doing so, having no knowledge of, nor interest in, this preparation."

In view of the claims that have been made for Benetol its composition is a matter of interest. What is this marvelous germicide; this "chemical," which destroys the germ of cancer; this wonderful discovery which "for six years Prof. Carel toiled night and day" to produce; this potent typhoid destroyer, 10 drops of which in a gallon of infected water will make the water not only safe but beneficial; what is this new medical wonder? This inquiry was referred to the director of the Association's Chemical Laboratory and secretary of the Council on Pharmacy and Chemistry, who replied:

"Chemical examination of benetol shows that it is a solution of alpha-naphthol containing about 18 gm. of the substance in 100 c.c. The solvent appears to consist of water, glycerin and soap. Alpha-naphthol is a well-known substance, closely related to, but not identical with, beta-naphthol which is official in the United States Pharmacopeia. The claim made in the advertising matter for Benetol, that it is a newly discovered compound is absurd. It is not a chemical compound, but a simple solution of the well-known substance alphanaphthol in the still better-known substances, glycerin, soap and water."

Treatment by New Remedies

In his new "Pocket-Book of Treatment," Ralph Winnington Leftwich, M.D., has the following to say about "the very latest" in therapeutics:

"The young practitioner purrs when he is told he is up to date. When he becomes more experienced he will have discovered that it is safer to be, say, six months behind the times. In fact, the up-to-date physician may be defined as a man who experiments on his patients. Leaving on one side remedies which are introduced to the profession for purely commercial reasons, a new remedy, or a new application of an old one, is to its discoverer what a new baby is to its mother—wonderful and unparalleled! In both cases, and without any dereliction from good faith, the judgment is biased. The remedy is introduced with a fanfare of trumpets loud in proportion to the status of the originator. Chemists [druggists] stock it, and other manufacturers not only imitate it, but puzzle their brains in coining fresh trade-marks which they hope will induce the public to think that theirs is the real original product, *et puis bon soir!* For, twelve months afterward, it is forgotten by all but the exasperated chemists [druggists] who have stocks of it left on hand. Sometimes, as in the case of a well-known preparation of arsenic, it is found to be downright dangerous.

"No, except for incurable cases, it is time enough to prescribe a preparation when it has stood the test of ample independent trials. Let others do the experimenting. New preparations are sometimes made in this way: A manufacturer, running his eye down a book on therapeutics, finds, perhaps, seven different drugs recommended for a certain disease. He makes a kind of canister-shot by combining the whole of them under a trade-mark name, introduces it to the profession, and gets it more or less widely recommended. He then feels strong enough to spend thousands on advertising it to the general public, and the latter complacently dose themselves with it. Such preparations must be left severely alone; for every physician should be equal to making any necessary combinations in a prescription. A proprietary medicine is like a ready-made suit: a prescription is 'made to measure.'

"In a different and often very useful category, are some of those synthetic products which, based on sound chemical reasoning, are tested first on animals and later only on patients."

Correspondence

Uncinariasis in Students in Texas

To the Editor:—THE JOURNAL, March 18, 1911, contains the following erroneous statement under the heading of "Medical News":

"Recent investigations among the students of the medical branch of the University of Texas, at Galveston, revealed the fact that 43 per cent. of the students are afflicted with uncinariasis."

In 1901, while Dr. Allen J. Smith was professor of pathology in the University of Texas, he examined the stools of eighty-six students in this institution and found eight of them, or 9.3 per cent. of the number examined, infested with hookworm. He described these results in full in his paper on "Uncinariasis in Texas" published in the *American Journal of the Medical Sciences* for 1903, Vol. cxxvi, pp. 768-798.

Last year, Dr. James Greenwood, Jr., demonstrator of medicine, in the routine laboratory course in clinical medicine, requested those members of the junior class who found an excess of eosinophils in their blood to have their stools examined. He found six cases of uncinariasis in a class of fifty-six. During the present session, he made a similar request but found only one case among forty-four students. He did not examine the stools of all of these students, but only of those who had eosinophilia. He has never found uncinaria without eosinophilia, although the latter may exist in other conditions than uncinariasis. This gives an average of seven cases of uncinariasis among 100 students examined by Dr. Greenwood, which is about the same ratio as that found by Dr. Smith.

It is of special interest that in no one of these seven cases found by Dr. Greenwood had the individual any symptoms which would cause him to suspect that he had intestinal parasites or any condition affecting the general health. The parasites were found by accident in a routine examination. In one case, there were some anemia and emaciation, which conditions improved after successful treatment. In the others, the general health and nutrition had not suffered.

On the same page of THE JOURNAL is the following statement:

"The Medical College of the University of Texas, at Galveston, is asking the legislature to grant the use of the quarantine fees at Galveston for the establishment and maintenance of a hospital in connection with the quarantine station at that point."

This statement is in danger of creating the misapprehension that a request has been made to use the quarantine fees for the current fiscal year, or for fees that may be collected in the future.

A bill was introduced in the last legislature providing for the transfer of a balance in a special quarantine fee fund at Galveston, amounting to about $13,000, to build pavilions for isolating and handling cases of contagious diseases. This fund was created in 1907 for building a residence for the state quarantine officer and repairing the quarantine station at Galveston. The balance remained after the completion of the improvements contemplated in the special appropriation of 1907 and could not be diverted for any other purpose except by act of the legislature.

WILLIAM S. CARTER, Galveston,
Dean of the University of Texas.

Nail in Chicken Gizzard

To the Editor:—The following account may prove of interest:

I have before me, on my desk, a dried chicken gizzard which has been opened and cleaned in the usual manner. Through the thick part of one half is a round aperture, 1/8 of an inch in diameter—in the dried specimen—at the internal opening and 1/4 of an inch in diameter on the external surface. Through this aperture extends a six-penny box nail, its head being on the internal surface of the gizzard. The head of the nail and the portion of it within the wall of the viscus are much corroded.

The history of the curiosity, given me with the specimen, is as follows:

The fowl from which the organ was taken was one of a flock of three dozen slaughtered at the age of about five months. Under ordinary observation with the rest of the flock no signs of indisposition had been noted, this fowl coming with the rest to each feeding and behaving in a normal manner. When slaughtered it was found, however, to be "light and poor" instead of fat as were the others. When opened for cleaning the bowels were found to be "black" and covered with a dark, thick fluid. The liver was hard and "black," there were adhesions about the "gizzard," and the nail was visible, protruding through the wall of the viscus about "3/4 of an inch."

To me the points of interest are the facts that the fowl could have swallowed the nail in the first place; and that it could have survived resulting injury so long without greater disability, for that the nail had been present for some time is evidenced by the degree of emaciation of the fowl and the extent of corrosion of the nail—granting that the nail was not previously corroded, which from the appearance of the specimen is a possibility only.

H. LA MONT YOUTZ, Willow City, N. Dak.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FETAL HICCUP

To the Editor:—Please give me the etiology, and significance, with relation to viability, of fetal hiccup. Also give me the references to articles bearing on fetal hiccup and other fetal movements.

I have a patient in the thirty-sixth week of a second pregnancy who directed my attention to a regular throb, beat or tap produced by the fetus; it is strongest in the region of the mother's navel, occurring with remarkable regularity about eighteen times a minute, and occurring about half the time, both day and night. Along with this throb are the other fetal movements—squirming, leaping, etc. The first pregnancy in this patient was normal in every way, and the baby normal for the first forty-eight hours, after which convulsions began, ending in death after six hours. The cause of these convulsions has never been clear to me nor to the men associated with me on that case, unless they came from some cerebral trauma during birth. The mother is very anxious for a child and more than usually apprehensive over abnormal conditions, and therefore called my attention to the throbbing described above.

It was new to me, and I found no enlightenment either from questioning my multiparous patients, or in the authorities, except in Edgar. In his second edition, discussing "quickening," p. 130, he says: "Among fetal movements should be included fetal hiccup." I did not find elsewhere in his book any explanation of fetal hiccup—hence my inquiry. "Fetal hiccup," if it were a true name, would seem to me to be a dangerous phenomenon—for hiccup means contraction of diaphragm muscles followed by inspiration. If a fetus really hiccuped wouldn't it draw in amniotic fluid, and by constant repetition completely fill the lungs with fluid, and therefore be drowned before having had a chance to breathe?

R. H. Brooks, Claremont, N. H.

Answer.—During the last twenty years several writers have reported cases of fetal hiccup. The movements that have been ascribed to hiccup-like contractions of the fetal diaphragm have been noticed in the latter part of pregnancy and generally can be felt by the mother. They are felt as sharp, quick impulses, about fifteen to twenty a minute, and lasting usually for a minute or two, when a quiet interval occurs. Sometimes they continue uninterruptedly for ten minutes The impulse can be felt by the hand placed on the abdomen and heard by the ear or phonendoscope. They are generally best heard in one of the lower uterine quadrants over the chest of the child. Ahlfeld, who has studied these movements with a kymographion and made numerous investigations, believes that they are more frequent in the early part of pregnancy and can be heard even before the heart-tones.

The cause and significance of this phenomenon are related to the question of fetal respiratory movements, which has been studied by Ahlfeld. The best discussion of this subject, as well as that of singultus, is in a paper by him in the *Monatsschrift für Geburtshülfe und Gynäkologie*, 1905, page 143, in which references to the cases reported up to the date of the article are given. Ahlfeld finds regular movements of the child which register on the kymographion from sixty to eighty a minute, which he holds must be due to fetal respiratory movements. The object of these movements is the preparation of the respiratory muscles for their function, which is exercised as soon as the child is born. The respiratory movements also help in the development of the ribs and the joint surfaces connecting them with the spinal column. Preyer in his "Physiology of the Embryo" says: "The new-born moves itself immediately after birth as it was accustomed to move before birth, with the exception of breathing and trembling." Ahlfeld completes this law as follows: "The new-born child makes only such movements as it has already made in the uterus. These movements are, of course, modified by the changed condition of the new-born." Ahlfeld regards the usual physiologic fetal inspiration as only superficial, as that is all that is necessary to the development of the respiratory organs. Probably the inspired fluid does not reach beyond the bifurcation of the trachea. How fetal hiccup is related to fetal respiration, and also how it is related to the common post-natal hiccup, Ahlfeld does not attempt to explain. He believes, however, that it occurs as a physiologic function of the diaphragm in practically all persons. Ahlfeld's theory of intra-uterine respiration and singultus has not been generally accepted, nor has it been satisfactorily refuted.

FORMULAS FOR ASTHMA REMEDIES

To the Editor:—Please give me a formula for an asthma remedy to be ignited under a paper cone or other convenient apparatus, and inhaled by the patient. There are a number of so-called asthma cures on the market, all of which have a similar composition (lobelia, stramonium, digitalis, hyoscyamus, tobacco, potassium nitrate, etc.), and one afflicted with asthma sooner or later finds one that affords him temporary relief. Kindly refer me to some work where I can find the formulas that have given the greatest satisfaction.

M. H. Farmer, M.D., Virden, Ill.

Answer.—A French asthma cigarette contains the following ingredients (Yeo):

Belladonna leaves	5½ parts
Hyoscyamus leaves	2¾ parts
Stramonium leaves	2¾ parts
Phellandrium aquaticum	1 part
Extract of opium	⅛ part
Cherry laurel water	a sufficiency

The dried leaves are cut small, mixed well and moistened with the opium which has been dissolved in the cherry laurel water. A small amount of potassium nitrate is added in order that the cigarettes may burn readily.

Some patented preparations contain lobelia, and something similar to Himrod's "cure" is as follows:

Powdered lobelia.
Powdered black tea.
Powdered stramonium leaves, each 1 ounce.

On this is poured 2 ounces of a saturated solution of potassium nitrate, which is thoroughly mixed and allowed to dry (Yeo). Portions of this are then burned and the patient inhales the fumes.

℞.

	gm.		
Potassii nitratis	15		
Pulveris anisi	15	or āā,	℥ss
Pulveris stramonii	30		℥i.

M. et fac pulverem.

Sig.: Ignite a thimbleful of the powder and inhale as directed. (The Journal, Jan. 2, 1909, p. 51.)

℞.

Pulveris belladonnæ foliorum	
Pulveris hyoscyami foliorum	
Pulveris stramonii foliorum	
Potassii nitratis	āā℥i.

M. et sig.: *Half a teaspoonful to be burned at one time.*

℞.

Stramonium leaves	ʒiv
Green tea	ʒiv
Lobelia	ʒjss

Mix and pour on the mixture enough saturated solution of potassium nitrate to wet it. Dry it and keep in closely stoppered bottle.

℞.

Daturæ tatulæ	ʒij
Stramonii foliorum	ʒij
Cannabis indicæ	ʒij
Potassii nitratis	ʒij
Olei eucalypti	ʒss

Mix thoroughly.—(An Index of Treatment: Hutchinson and Collier, p. 80.)

Cigarettes made of paper soaked in a solution of nitrate of potassium and belladonna may be smoked or they may be made in the following manner:

℞.

Belladonnæ foliorum	40	gr. vj
Hyoscyami foliorum	2	gr. iij
Stramonii foliorum	2	gr. iij
Extracti opii	015	gr. ¼
Aquæ laurocerasi		q.s.

M. These various leaves are broken up like commercial tobacco and moistened by adding the cherry-laurel water, which should contain the opium. Finally, a whole leaf soaked in the same fluid is used as a cover, or a piece of cigarette paper may be employed in the same manner. (Hare's Practical Therapeutics, p. 619.)

LITERATURE ON MUNICIPAL SANITATION

To the Editor:—Can you give me information or cite literature on the subject of municipal sanitation? I am particularly desirous of suggestions as to some method of dealing with stables and stable manure in order to diminish the propagation of flies.

C. A. Woodard, Durham, N. C.

Answer.—As is well known, stable manure is one of the most frequent breeding-places for flies, and probably the most practical method of preventing them from propagating would be stringent regulations requiring the daily cleaning of stables and the storing of the manure in closed or carefully screened bins, with frequent removal of the manure.

The prevention of flies in cities, of course, involves the prevention of the accumulation of other sorts of waste, including garbage, in which flies may breed. Numerous editorials and articles have appeared in The Journal concerning flies as carriers of disease, and their prevention, and on other phases of municipal sanitation. A list of these, together with some books on municipal sanitation and hygiene, will be found below:

Editorial: Abating the Fly Nuisance, The Journal, Aug. 20, 1910, p. 700; this issue of The Journal also contains an editorial on the hypochlorite method of purification of water and refers to an article on this subject (Paper 229; U. S. Geological Survey, 1909).

Editorial: The Fly and Typhoid Fever, The Journal, Nov. 19, 1910, p. 1812.

Flies as Carriers of Infection, London Letter, The Journal, Oct. 15, 1910, p. 1390.

Orton and Dodd: Transmission of Bacteria by Flies, etc.; *Boston Med. and Surg. Jour.*, Dec. 8, 1910; abstracted in The Journal, Dec. 24, 1910, p. 2267.

Felt, E. P.: Methods of Controlling the House Fly, etc., *New York Med. Jour.*, April 2, 1910; abstracted in The Journal, April 16, 1910, p. 1335.

Beyer, H. G.: Dissemination of Disease by the Fly, *New York Med. Jour.*, April 2, 1910; abstracted in The Journal, April 16, 1910, p. 1335.

Editorial: Sanitary Side of the Garbage Question, The Journal, April 30, 1910, p. 1447.

Dutton, W. F.: Bluebottle Flies as Carriers of Infection, The Journal, Nov. 6, 1909, p. 1561.

Utilization of Garbage, Department of Queries and Minor Notes, The Journal, April 2, 1910, p. 1157; in this article are references to works on sanitation.

Disposal of Garbage and Filtration of Water-Supply, Department of Queries and Minor Notes, The Journal, July 3, 1909, p. 43.

Articles on Disposal of Excreta, U. S. Public Health Reports, Aug. 19, Nov. 11, Nov. 18, and Dec. 16, 1910.

Chapin: Municipal Sanitation in the United States, Providence, R. I., 1910, the Providence Press.

Goodrich: Disposal of Refuse, Wiley, New York, 1901.

Baker, Municipal Engineering and Sanitation, New York, 1902, Macmillan Co.

Godfrey, H.: The Health of the City, Houghton, Mifflin & Co., Boston, 1910.

Primer of Sanitation, World Book Co., Yonkers, N. Y., reviewed in The Journal, Feb. 19, 1910, p. 642.

Prudden, T. M: Dust and Its Dangers, G. P. Putnam's Sons, New York, 1910.

FETAL CIRCULATION

To the Editor:—1. What causes the pulse-wave in the umbilical cord? 2. Is this wave toward or from the child? 3. Is the circulation of the fetal blood caused by the fetal heart or is it *maternal*? 4. Does any maternal blood enter the fetus? 5. Can the placental souffle be heard after the death of the fetus?

Antonio D. Young, Oklahoma City, Okla.

Answer.—1. The pulse-wave in the umbilical cord is caused by the beating of the fetal heart.

2. The pulse-waves are essentially arterial impulses and pass from the heart to the periphery along the arteries. Therefore the pulse of the umbilical cord is in the artery and the wave passes from fetus to placenta, "from the child."

3. The circulation of the fetal blood is caused solely by the contractions of the fetal heart.

4. No maternal blood enters the fetus. The maternal blood circulates through sinuses of the placenta, bathing the villi within which the fetal blood circulates. Through the thin-walled membrane of the villi the oxygen of the maternal arterial blood diffuses and combines with the hemoglobin of the fetal blood, after which it returns to the fetus through the umbilical veins. It may be said in passing that the umbilical artery carries impure blood from the fetus to the placenta, where it is purified first through the loss of carbon dioxid, and, second, through the diffusion of waste products into the maternal blood, where it is oxygenated as described above and replenished by the diffusion of food materials from the maternal blood into the fetal blood.

5. The placental souffle or murmur is sometimes called the uterine souffle and is heard over the site of the placenta. It might be mentioned that the uterine souffle may also be heard over uterine fibroids, which fact necessitates some care in discriminating between a fibroid tumor and pregnancy. The placental souffle may be heard after the death of the fetus. The term "souffle" is also applied to a murmur that is heard in the umbilical cord. This is called the fetal souffle. If the cord should become looped around the neck or leg of the fetus, and thus become constricted, a souffle may be heard. This fetal souffle, due to the pulsation of fetal blood through a constricted segment of umbilical cord, will of course cease the moment the fetal heart ceases to beat.

ACUTE TONSILLITIS

To the Editor:—1. What are the causes of *acute tonsillitis*?

2. What is the proportion of cases due to non-microbic factors?

3. Is the ordinary iron mixture or any astringent beneficial in the acute stage, or should the use of such preparations be confined to the later stage in which the tonsils have been freed of all exudate?

4. What is the pathology of the white cheesy exudate?

By answering these questions you will help me to understand an illness which is common but not entirely clear to me.

Samuel Levine, M.D., Brooklyn.

Answer.—1. The principal causes of acute tonsillitis are exposure to cold and sudden thermic changes, especially in persons of rheumatic diathesis. Tonsillitis is frequently associated with menstruation. Among other causes, we may mention traumatism such as irritating fumes and vapors. Predisposing causes are nasal or postnasal irregularities, general lowered systemic tone, and various gastro-intestinal disturbances.

2. A definite answer cannot be given. There are a great number of microbes in the fauces continually, either in well or ill people. What the influence of these microbes may be in the development of the inflammation has never been definitely determined.

3. The iron mixture and other stimulating or astringent applications are often beneficial in the early stages of the disease, more so than in the later stages. In the late stage, tonics are useful. In the early stage, the inflammation may sometimes be aborted by stimulating applications. The most satisfactory consists of equal parts of guaiacol and almond oil to be used as a spray once a day. This causes intense burning for about a minute, but afterward gives great relief from pain for hours and in a considerable percentage of cases, will materially cut short the attack.

4. These cheesy masses consist of fibrinous exudate, necrotic epithelial cells, bacteria and the earthy matter from the ordinary secretions of the tonsils.

REMOVAL OF FOREIGN BODIES FROM THE CONJUNCTIVA

To the Editor:—I recently ran across an extraordinary statement in Berry's "Manual of Practical Ophthalmology," Lippincott, 1905. It is part of the subject matter "Foreign Bodies in the Conjunctiva" page 132. Speaking of removing them the author says: "Attempts at removing them, without eversion, with a camel's hair brush or the tip of the tongue passed below the upper lid, should not be made."

Such surgical technic is beyond my comprehension or imagination. Why a modern text-book should have such stuff incorporated in its text goes beyond me.

W. L. Moore, *Honolulu, H. T.*

Answer.—The removal of foreign bodies from the external ocular apparatus by the laity as well as by some members of the medical profession is, to say the least of it, often an extraordinary procedure. In certain countries the attempt by the former to dislodge foreign substances from the conjunctival sac with the tip of the tongue is a common experiment, while the camel's-hair brush is not infrequently employed (beneath the uneverted lid) by inexperienced physicians for the same purpose. Consequently Berry's reference is to some extent apropos, although he might have elucidated the rather obscure allusion to these attempts.

A layman realizes, of course, that the important thing is to remove the foreign body. In the process, however, considerable damage is often done to the conjunctiva. It might be well for the laity to know the value of a saturated solution of boracic acid, which is very soothing after a foreign body has been taken from the eye. It has most of the merits of the many eye nostrums on the market, as boric acid is the chief constituent of many of them. Such a solution is kept on hand in many households, and it ought to be a more common adjunct of the family medicine chest. It would help to alleviate the trauma often caused by well-meaning but unskilful attempts at removing the offensive foreign body.

SODIUM GLYCOCHOLATE AND CHOLESTERIN TESTS FOR SYPHILIS

To the Editor:—Please give me information about sodium glycocholate and cholesterin tests for syphilis or tell me where I can procure the desired information, including the technic.

J. D. Rueng, M.D., San Francisco.

Answer.—The tests referred to have not proved specific and, we believe, are now generally abandoned. Descriptions of them may be found in the articles by W. J. Butler, "Serum Diagnosis of Syphilis," The Journal, Sept. 5, 1908, p. 824, and "The Serum and Precipitate Reactions for Syphilis and Their Clinical Value," The Journal, April 2, 1910, p. 1115. Other references to the subject are the following:

Wassermann: Berlin. klin. Wchnschr., 1907, lxiv, 1599.

Landsteiner, Müller and Potzl: Wien. klin. Wchnschr., 1907, xx, 1564.

Levaditi and Yamanouchi: Compt. rend. Soc. de biol., 1907, lxii, 741.

Fleischmann: Berlin. klin. Wchnschr., 1908, lxv, 490.

Sachs and Altmann: Berl. klin. Wchnschr., 1908, lxv, 494, 699.

Porges: Wien. klin. Wchnschr., 1908, xxi, 206.

Nobl and Arzt: Wien. klin. Wchnschr., 1908, xxi, 287.

Fritz and Kren: Wien. klin. Wchnschr., 1908, xxi, 386.

Eisler: Wien. klin. Wchnschr., 1908, xxi, 422.

Kraus: Wien. klin. Wchnschr., 1908, xxi, 206.

Porges and Meier: Berlin. klin. Wchnschr., 1908, lxv, 731.

Klausner: Wien. klin. Wchnschr., 1908, xxi, 213.

Klausner: Wien. klin. Wchnschr., 1908, xxi, 363.

Mefford: New York Med. Jour., Oct. 31, 1908.

POEHL'S SPERMIN IN ARTERIOSCLEROSIS

To the Editor:—In a recent number of the *Gazette méd. belge*, xxi, No. 43, p. 424, I read a detailed report of five cases of arteriosclerosis in which the patients were all markedly improved and some of them apparently cured by a course of "Sperminum Poehl," an advertised remedy which I have always distrusted and never prescribed. I am now suffering myself from a somewhat advanced case of arteriosclerosis and would like to try this remedy if the Council has learned anything in favor of it and if there is no reason to fear bad effects from it.

X. Y. Z.

Answer.—Apparently the exploitation of Poehl's spermin passed several years ago from the domain of experimental medicine to that of nostrums advertised to the laity. So far as we know, it has received no recent discussion from reliable clinicians or experimenters. In some medical journals, as also in lay journals, it is true, one still reads that Poehl's spermin is successfully applied in "neurasthenia, senile marasmus, anemia, rachitis, gout, chronic rheumatism, syphilis, hysteria, tuberculosis, typhus, diseases of the heart, nephritis, tabes dorsalis, paralysis, neurasthenic impotence, overwork, acute diseases, and for convalescents." Few quack advertisements would differ much from this puff of Poehl's spermin. So far as we know, there is no reason to fear injurious results from the use of the remedy; neither might any good be expected from its use in arteriosclerosis.

The Public Service

Medical Department, U. S. Army

Changes for the week ended April 8, 1911.

Thomason, Henry D., captain, ordered to proceed to Jefferson City, Mo., on official business relative to the reorganization of the sanitary troops of that state.

Chase, Chauncey L., M.R.C., ordered to active duty and assigned to station at Fort Oglethorpe, Ga.

Davis, Arthur O., lieut., ordered to proceed from Fort Oglethorpe, Ga., to San Antonio, Texas, for duty with maneuver division at that place.

Wales, Philip G., M.R.C., reported for temporary duty at Fort Miley, Cal.

Bourke, James, captain, in addition to his duties at Fort Crockett, Texas, will report to the commanding general, first separate brigade, for duty as medical supply officer of that brigade.

Wing, F. F., D.S., reported for temporary duty at Fort Robinson, Neb.

Bourke, James, captain, will, in addition to his other duties, perform the duties of medical superintendent, transport service, at Galveston, Texas.

Moncrief, William H., captain; Pyles, Will L., captain; Casper, Joseph, lieut., and Sherwood, Joseph W., M.R.C., will proceed to Galveston, Texas, and report to the commanding general, first separate brigade, for duty.

Nichols, Henry J., captain, detailed to represent the medical department of the Army at the eighth annual meeting of the American Society of Tropical Medicine, New Orleans, May 18 and 19, 1911.

Craig, Charles F., captain, will proceed to Montgomery, Ala., for the purpose of delivering a lecture, April 18, before the medical officers of the Alabama National Guard on the subject of malarial disease.

Le Hardy, Julius C., M.R.C., on completion of such duty assigned him by commanding general, department of California, will proceed to Fort Ward, Wash., for duty.

Medical Corps, U. S. Navy

Changes for the two weeks ended April 8, 1911.

Haynes, J. P., P. A. surgeon, ordered to the naval station, Olongapo, P. I.

Huff, E. P., asst.-surgeon, detached from the naval hospital, Canacao, P. I., and ordered home.

Michaels, R. H., A. A. surgeon, ordered to the marine recruiting station, Chicago.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended April 5, 1911.

Wasdin, Eugene, surgeon, placed on "waiting orders," effective Sept. 22, 1911.

Cumming, H. S., surgeon, directed to proceed to Fisherman's Island, Va., on special temporary duty.

Foster, M. H., P A. surgeon, directed to proceed to Bureau for consultation. Relieved from duty at Ellis Island, N. Y., and directed to report to the commissioner of education, department of the interior, for duty in Alaska. Granted seven days' leave of absence from April 3, 1911.

Billings, W. C., P. A. surgeon, directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Earle, B. H., P. A. surgeon, leave of absence for thirteen days from March 1, 1911, amended to read "ten days from March 2, 1911."

Chapin, C. W., asst.-surgeon, granted seven days' leave of absence from March 22, 1911, under paragraph 191, Service Regulations.

Draper, W. F., asst.-surgeon, directed to report to the commanding officer of the Revenue Cutter *Bear* for duty.

Schwartz, Louis, asst.-surgeon, directed to proceed to Seattle, Wash., and report to the commanding officer of the Revenue Cutter *Tahoma* for duty

Moorer, M. P., A. A. surgeon, granted ten days' leave of absence from March 28, 1911.

Story, H. C., A. A. surgeon, granted thirty days' leave of absence from May 1, 1911.

Board of medical officers convened to meet at the Marine Hospital office, customs house, New Orleans, on April 3, 1911, for the physical examination of candidates for appointment as cadet-engineer in the Revenue-Cutter Service. Detail for the board: Passed Assistant Surgeon A. D. Foster, chairman; Acting Asistant Surgeon J. T. Scott, recorder.

Medical Economics

This Department Embodies the Subjects of Postgraduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

INDUSTRIAL DISEASES AND PHYSICIANS

JOHN B. ANDREWS

Secretary, American Association for Labor Legislation

NEW YORK CITY

The average American feels the magnitude of the national growth; he sees something of the result of the combined labor of millions of workers; he realizes, to some extent, that his country has leaped into the van of civilization, and he believes implicitly in his country and in himself. But the average man is an empirical observer. So far as mere physical achievement goes, he sees aright. His perception of the magnitude of individual and national effort, his knowledge of the volume of production, is right. But he fails utterly to understand that the tremendous social forces that have been evolved, and that have made these things possible, have necessarily wrought profound changes in social relations, in social needs, and in the relations of the individual to society.

Of all professional men, perhaps the most definitely social in his service is the physician. His duties bring him into the most important and intimate human relations. His knowledge is purchased only by many years of highly specialized training, and the medical profession, as a natural result, becomes the guardian of the public health. The average modern man does not stop to reflect that he is impossible without the physician, who attends his entry into the world, keeps him in it as long as is humanly possible, and in the end sees him out of it.

But the contrary is equally true, for the physician is possible only because of the modern man, to understand whom the physician needs a clear knowledge of his patient's normal environment, and this the physician does not require as part of his necessary training. An examination of the overcrowded medical curriculum gives no indication of the fact that we live in an industrial society. The result is that a large percentage of physicians fail to realize the occupational source of many diseases, as has been shown by investigations.

An enormous range of diseases is directly attributable to the patient's work. The disease is contracted by him as an immediate result of his occupation, or his occupation produces conditions that foster the contracting of diseases, such as tuberculosis, neurasthenia and anemia. The bald statement of this fact is but a truism, known more or less definitely to every physician. It assumes vast proportions, however, when it is clearly recognized that the population of our country is a working population, and that there are few if any occupations that a man or woman may follow that do not, without careful regulation, produce sickness in one form or another, or contribute conditions that make the worker liable readily to contract disease from which he would ordinarily be immune.

The conditions under which the people of this country work produce in their aggregate the problem covered by the term "industrial hygiene," a problem of comparatively recent recognition among us. We have been so busy making profits that we have had no time to inquire how they are made or what their making entails. We are therefore obliged to go abroad to countries that have studied the subject in order to acquire scientific foundations on which to base our plans for improvement.

Germany and Great Britain have, perhaps, done more than other countries in this direction; and, characteristically, the German investigations are the more complete and systematic.

For want of American data we may base our estimates of the extent of sickness due to occupational conditions on the careful results of German experience. That experience shows that the number of cases of actual sickness is equivalent to 40 per cent. of the number of persons exposed to risk. If, therefore, we take the number of persons engaged in gainful occupations in the United States in 1910 as 33,500,000, we may present the following table, taken from the Memorial on Occupational Diseases presented to President Taft on September 29 last:

ESTIMATE OF SICKNESS AND ITS COST AMONG OCCUPIED MALES AND FEMALES IN U. S., 1910 (33,500,000)

(a) Estimated number of cases of sickness on the German basis of 40 per cent. of the number of persons exposed to risk, 13,400,000.

(b) Estimated number of days of sickness on the German basis of 8.5 days per person *per annum*, 284,750,000.

(c) Estimated loss in wages at an average of $1.50 a day for 6/7 of the 284,750,000 days, $366,107,145.

(d) Estimated medical cost of sickness at $1 a day for 284,750,000 days, $284,750,000.

(e) Estimated economic loss at 50 cents a day for 6/7 of the 284,750,000 days, $122,035,715.

(f) Total social and economic cost of sickness *per annum*, $772,892,860.

(g) Estimated possible economic saving in the health of individual workers on a basis of 25 per cent. reduction *per annum*, $193,223,215.

Objection to these figures may be urged on account of the differences that exist between industrial conditions in Germany and in America. The differences are admitted; but the figures here given would beyond doubt have to be increased on every count.

This country's industry is, to a large extent, innocent of the devices long in general use abroad, and particularly in Germany, for safeguarding the health of the workers. The occasional voluntary efforts of employers are far too spasmodic and unscientific to be regarded as important factors in this connection. The body of factory legislation in America is also pitifully slight, and noteworthy in the main for its lack of scientific knowledge and method. And, when even poorly conceived laws are enacted, the machinery provided for their enforcement is ludicrously insufficient. Industrial regulations in America, as they affect the health of the workers, are as unscientific and chaotic as in any country in the world that claims to possess the elements of western civilization. We have each year about 500,000 industrial accidents, one-half of which might be prevented. We have in our midst every year at least 13,500,000 cases of industrial sickness, involving a loss to society of $772,892,860, and of all this loss we can save at least 25 per cent.

We have, then, to devise means for securing accurate and complete information on the incidence of industrial disease. On this immediate and preliminary necessity, Professor Charles R. Henderson said recently, speaking at the fourth annual meeting of the American Association for Labor Legislation at St. Louis:

> In the social conflict with communicable diseases (scarlet fever, diphtheria, etc.), reports to health authorities are found essential to success. Hidden disease works all the greater damage because it is in the dark. What is brought to light can be fought in the open.
>
> The same is true of occupational diseases. So long as their nature, ravages, causes are concealed, the medical profession is deprived of information it needs, workmen die in ignorance of what kills them, public sentiment on the subject does not exist, legal regulation is not enacted or not enforced.
>
> It is now generally recognized that the members of the medical profession have a special duty to the community in the matter of reporting diseases and facts for vital statistics. They alone have the information; they have received much of their education at public expense in public or endowed schools, laboratories or hospitals; and they are supported by the public; they are excused from various duties which fall to other citizens.
>
> If they neglect this professional duty, misery and death will result. If they make their reports as perfect as possible, science will be advanced, legislation will be wiser and more effective, and public wealth and happiness will be increased. How many physicians recognize the occupational origin of certain diseases? The investigations of the Illinois Commission on Occupational Diseases have disclosed the unfortunate fact that many physicians do not know the shop origins of certain maladies.
>
> The records of death in the offices of health authorities, coroners, the records of public hospitals, of insurance associations, even when made by medical men, yielded but little information as to the working place and its conditions, the essential matter.
>
> Various diseases of the central nervous system, muscular and respiratory systems give very little direct clue to the causes of such disorders.

The statistical and other precise information that would be made available by the systematic reporting of cases of disease due to occupation would be of the utmost value, and, indeed, would be essential to intelligent action. But the mere classification of diseases does not provide a means for their elimination or diminution. It is necessary that the influence of the physician be felt in the actual place of work.

Adequate factory and workshop inspection is essential, and while it is true that in many branches of this work non-medical men are quite competent, in some of the most vital branches medical men are essential. "Medical men alone," said Dr. William C. Hanson, of the Massachusetts Board of Health,[1] "are in a position to make the best use of facts obtained concerning the sanitary condition of premises where men and women work; to study the possible injurious effects of certain injurious processes on the health of the person engaged therein; to inspect devices designed to protect the employees against injurious and dangerous substances, and to judge of the effects on the health of operatives of such substances, as well as to detect pathologic signs or symptoms of certain poisons, dusts and fumes incident to some occupations; to inquire as to the health of employees, both for the purpose of aiding those found in ill-health or physically unfit for work, and for protecting others from infectious diseases; to make physical examination of minors, and, whenever possible, of adults engaged in trades or occupations deemed to be injurious to health; and to collect and make proper use of all facts and data, including morbidity and mortality statistics, pertaining to occupational hygiene."

It is frequently urged in opposition to the demand for such efficient factory inspection and the necessary legislation, that conditions in America are not nearly so bad as in Europe, and that, in any event, European conditions cannot be regarded as giving a clue to conditions in America. That, however, is mere childishness. No reasonable human being could take seriously the argument that although lead poisons English workers or German workers it does not necessarily poison "American" workers. Such beginnings of scientific investigation as have been conducted in America give us a picture of conditions that constitute a widespread and persistent menace to the national health.

Thus the investigation into phosphorus poisoning in the match industry, carried out in cooperation with the United States Bureau of Labor, produced facts that call for immediate Federal legislation. An intensive investigation in the homes of the workpeople of but three of the sixteen American match factories yielded a total of eighty-two cases of phosphorus poisoning. Detailed investigation in fifteen factories showed that of the 3,591 persons employed, 65 per cent. were working under conditions exposing them to the fumes of phosphorus and the dangers of phosphorus poisoning. Here, as in many other industries, the ignorance or self-interest of many employers prevented them from properly instructing their workpeople concerning even the elementary and at best inadequate precautions against contracting this peculiarly loathsome disease.

The claim made by Dr. Ivy, dental examiner for the Pennsylvania Match Company, that under the present tariff and labor conditions, matches cannot be produced from sesquisulphid of phosphorus by manufacturers in this country in competition with foreign manufacturers[2] is absurd. Match manufacturers representing more than nine-tenths of the total output in America, in their desire to abolish "phossy jaw," have voluntarily gone on record in writing as follows:

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[1] Proc. Fourth Annual Meeting, American Association for Labor Legislation.

> In the event of the prohibition of the manufacture of white phosphorus matches, we have no doubt of our ability to supply a strike-anywhere match which will be satisfactory.

It is interesting to recall that the treasurer of the match company which employs Mr. Ivy said in a letter to the U. S. Bureau of Labor (Bulletin 86, p. 131):

> So far as we are concerned, one thing is sure, if there is any substitute for white phosphorus that would eliminate the danger, even if it would cost more money, and considerably more money, I know that our people will be only too glad to adopt it.

Attempted regulation has been abandoned in one country after another after a fair test, and absolute prohibition of the use of poisonous phosphorus in match-making is now recognized as the only sure remedy for this horrible and wholly unnecessary disease.

The report of the Illinois Commission on Occupational Diseases, already referred to, shows the existence of similar dangerous conditions. Twenty-eight trades were investigated, in all of which lead-poisoning may occur, and 578 individual cases of lead poisoning were secured from the records of physicians during the past three years. Physicians will understand that this number is a minimum, because records are not consistently kept by private practitioners, and only recorded cases are included.

A striking illustration of what stringent workshop regulation can do toward decreasing the amount of sickness in occupations is given by Dr. Alice Hamilton. The figures given in her report are further emphasized by the fact that in one place investigated by Dr. Hamilton, where only thirteen men are employed, fifty men are engaged in the course of the year to maintain the minimum staff force. Another place engages 300 men to maintain a force of fifty. Still another, with a payroll of from 450 to 600, loses from 20 to 40 per cent. of its workers every pay day. In all these cases, the men drop out as they become "leaded."

A preliminary investigation into mercurial poisoning in New York and New Jersey produced in three months a record of sixty cases in the hatting industry. In Great Britain, on the other hand, where every case is immediately reported, only ninety-four cases for all industries have occurred in twelve years.

With the exception of phosphorus, lead and mercury poisoning, little, if any, investigations of value have been made in this country into the vast question of industrial poisoning. That extensive investigation carried out by competent authorities is urgently needed can be seen from the following list of poisons that are in every-day use in our industries:

Alcohol, Amyl
Alcohol, Methyl
Ammonia
Aniline
Antimony
Arsenic
Arseniuretted hydrogen gas.
Benzol
Carbon dioxid
Carbon disulphid
Carbon monoxid
Chlorid of lime
Chlorin
Chromium
Dinitrobenzol

Formaldehyd
Hydrochloric acid
Hydrofluoric acid
Lead
Manganese
Mercury
Nitrobenzene
Nitrous gases
Phosphorus
Picric acid
Prussic acid
Pyridin
Sulphur chlorid
Sulphuretted hydrogen
Sulphurous acid

This list does not, of course, exhaust the conditions to be found in industry that are detrimental to health. Dr. Thomas Oliver treats the subject of occupational disease under five general heads: (1) diseases due to gases, vapors and high temperatures; (2) diseases due to conditions of atmospheric pressure; (3) diseases due to metallic poisons, dusts and fumes; (4) diseases due to organic or inorganic dust and heated atmospheres; (5) diseases due to fatigue.

When the wide range of factors affecting detrimentally the health of the workers of America is realized, together with the fact that practically no scientific measures are in operation for their relief, it becomes evident that the problem of industrial disease is one that calls for immediate investigation. The success of such an investigation, and the measures to be taken following it, depend very largely on the cooperation of the medical profession. Physicians can furnish the knowledge that enables the subject to be intelligently and scientifically handled, and on them must devolve the responsibility of reporting to appointed authorities all cases of sickness due to the patient's occupation.

To secure this necessary preliminary step, the American Association for Labor Legislation has introduced into the legislatures of the principal industrial states a uniform bill providing for the reporting of occupational diseases by physicians. The essential parts of this uniform measure are as follows:

> Every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic or mercury or their compounds, or from anthrax, or from compressed-air illness, contracted as a result of the nature of the patient's employment, shall send to the Commissioner of Labor a notice stating the name and full postal address and place of employment of the patient and the disease from which, in the opinion of the medical practitioner, the patient is suffering.

It is, of course, recognized that a national investigation of occupational diseases is needed. A most valuable aid in this work would be a clinic for the study of industrial diseases, such as has been established recently at Milan, Italy. Such an institution would be valuable in affording ideal conditions for the study and prevention of occupational diseases, and in connection with a scientific system of recording, it would immeasurably increase the social service of physicians.

Metropolitan Tower.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Ninth Month—Third Weekly Meeting

Diseases of the Nervous System (Continued)

Chorea

Etiology: Age, sex, season. Relation to rheumatism. Overwork in school, anemia, ocular defects. Heredity. Exciting causes.

Symptoms: Onset of spasms, character, intensity. Course of spasm. Endocarditis. Mental condition. General condition. Duration.

Treatment: Hygiene, diet, control of patient. Medicinal treatment, arsenic, sodium salicylate, antipyrin, strychnin, etc.

Acute Meningitis

I. Cerebrospinal Meningitis

Symptoms: Clinically may be (a) hyperacute, (b) usual, (c) mild, (d) chronic in form. Onset, vomiting, convulsions, chill, pain, muscular rigidity. Eruptions on skin. Fever. Headache, pain in neck, hyperesthesia. Delirium, apathy, coma, muscular rigidity, opisthotonos. Kernig's sign. Eye and ear symptoms. Respiration, pulse. Blood-count. Course, duration and terminations.

Treatment: Medicinal treatment. Serum treatment, technic, results.

II. Simple Acute Meningitis

Etiology: Pneumococcus, streptococcus and staphylococcus, colon bacillus, etc. Secondary to acute infections.

Diagnosis: History of previous disease, onset of brain symptoms.

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[2] Ivy, Robert H.: The Prevention of Industrial Phosphorus Poisoning, The Journal A. M. A., April 8, 1911, p. 1018.

Medical Education and State Boards of Registration

COMING EXAMINATION

Georgia Eclectic: State Capitol, Atlanta, about April 20. Sec., Dr. C. W. Miller, 192 W. North Ave.

South Dakota January Report

Dr. F. W. Freyburg, Secretary of the South Dakota State Board of Medical Examiners, reports the written examination held at Aberdeen, Jan. 11-12, 1911. The number of subjects examined in was 15; total number of questions asked, 125; percentage required to pass, 75. The total number of candidates examined was 32, of whom 29 passed and 3 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School,	(1899) 90.3; (1909)	84.7; (1910) 85.6.
American Coll. of Medicine and Surgery, Chicago..	(1907)	81
College of Physicians and Surgeons, Chicago,	(1908) 76.2; (1910)	83.6, 88.5.
Rush Medical College..............	(1895) 75.1; (1908)	87.7
Hahnemann Medical College and Hospital, Chicago.	(1901)	75
Drake University	(1902) 76; (1910)	81.8
State Univ. of Iowa, Coll. of Med...	(1902) 80.9; (1910)	82.1
Keokuk Medical College, Coll. of Phys. and Surg..	(1900)	80.6
University of Michigan, Dept. of Med. and Surg..	(1909)	87.7
University of Minnesota, College of Medicine,	(1908) 75.9; (1909)	80, 80.4; (1910) 82.9.
Ensworth Medical College......................	(1909)	79.4
St. Louis College of Phys. and Surg..	(1909) 79; (1910)	77.6
Cornell University Medical College.............	(1899)	83.6
Jefferson Medical College......................	(1910)	87.2
Milwaukee Medical College.........	(1905) 85.7; (1910)	83.3
University of Toronto, Ontario......	(1907) 81.2; (1908)	83.5

FAILED

College	Year Grad.	Per Cent.
Bennett Medical College......................	(1909)	66.1
Drake University	(1902)	73
Creighton Medical College....................	(1907)	71.9

The following questions were asked:

BACTERIOLOGY

1. What kind of bacteria are most commonly found in suppurative processes. (*b*) Describe them. 2. What are the three sub-divisions of the colon typhoid bacillus group. 3. What do you understand by (*a*) Phagocytes. (*b*) Blastomycetes. (*c*) Thermal Death Point. (*d*) Antiseptics. (*e*) Disinfectants. 4. Describe a diphtheric throat. How would you obtain a culture? 5. How would you dispose of the excreta of (*a*) typhoid patient. (*b*) tubercular patient.

REGULAR THERAPEUTIC AND PRACTICE

1. Describe three of most common intestinal worms and give treatment for one kind. 2. Describe and treat rickets. What is [illegible]us and scorbutus? 3. What are the contra-indications of [illegible]um viride? What is its therapeutic value? 4. How would [illegible] distinguish between autotoxemia and acute ptomaine poisoning? 5. Describe symptomatic difference between tetanus and strychnin poisoning. 6. Differentiate acute alcoholism, apoplexy and epilepsy. 7. What is arthritis deformans? Give diagnosis and prognosis. 8. Describe and treat hemicrania. 9. What are the differences in the physical signs of initial incompetency and functional systolic murmurs? 10. Define briefly: Aphasia, apoplexy, thermic fever, myalgia fever, parotitis, septicemia, pyemia, pachymeningitis.

MEDICAL JURISPRUDENCE

1. Give signs of death by drowning. 2. What are the duties of a coroner upon receiving notice that a dead person has been found in his jurisdiction? 3. State the method of procedure, in this state, to procure the commitment of a person to the hospital for the insane. 4. In making a microscopic examination of blood-stains, what characteristics would lead you to believe they were produced by human blood? 5. What conditions, from a legal standpoint, would justify the induction of premature delivery?

PHYSIOLOGY

1. What action has the gastric juice on the carbohydrates and fats? 2. Give the *composition*, reaction, and uses of blood. 3. Describe the red blood-corpuscles and give their best known and most important function. 4. Describe the fetal circulation. 5. Name the erectile tissues of the body, and explain their function. 6. What digestive changes take place in the (*a*) small intestines? (*b*) in the large intestines? 7. Describe the sphygmograph and state its use. 8. How do arteries, veins; and capillaries differ as to function and structure? 9. Define emulsification, and saponification, and give examples of each. 10. What is an (*a*) efferent nerve? (*b*) afferent nerve? Give illustrations of each.

ECLECTIC MATERIA MEDICA, THERAPEUTICS AND PRACTICE

1. Define the terms diaphoretic, narcotic, and poison, and give examples of each. 2. Name several of the best stimulants, and give dose of each. 3. Name some of the best intestinal antiseptics, and doses of same. 4. Give the specific indications for hydrochloric acid, sodium bicarbonate, belladonna, aconite, and dose of each. 5. Diagnose and treat a case of pneumonia. 6. Give differential diagnosis between appendicitis, and gall-stones. 7. What do you know about infantile paralysis—its cause, symptoms and treatment? 8. What are the earliest symptoms of poisoning from the external use of carbolic acid. 9. Give symptoms and treatment of perforation of bowels resulting from typhoid fever. 10. Write a prescription for a good general tonic.

CHEMISTRY

1. Give a test for sugar in urine. 2. Give a common name for the following formula: H_2O_2, C H C_{13}, CH_4O, C_2H_5OH. 3. In what different compounds is sulphur found in nature? 4. What decompositions occur in the preparation of chlorin from rock salt? 5. Give chemical name and formula for lunar caustic.

EYE, EAR, NOSE AND THROAT

1. Diagnose and treat case of iritis. (*b*) Diagnose and treat case of keratitis. 2. Name and describe four errors of refraction and treat each. If lens is prescribed be definite. 3. Give treatment and prognosis of severe burn of eye involving lid and ocular conjuctiva. 4. Give treatment in well marked case of hypopyon. 5. Differentiate between diphtheria and follicular tonsillitis and treat case of follicular tonsillitis. 6. Diagnose and treat a case of hypertrophy of pharyngeal tonsil. 7. Describe the Eustachian tube, giving anatomy and function. 8. Draw diagram illustrating cross section of nose showing turbinated bodies, and treat a case of hypertrophy of inferior turbinate. 9. Give etiology, symptoms and treatment of empyema of frontal sinus. 10. Give three common causes of deafness and treat a given case.

OBSTETRICS

1. How would you treat vomiting of pregnancy? Give etiology. 2. Tell what you know about toxemia of pregnancy. 3. Diagnose and treat a case of placenta prævia, being called after mother is in labor. 4. Make an accurate diagnosis of a vertex presentation. 5. Give three main rules for the treatment of uterine inertia in labor. 6. Give immediate diagnosis and treatment of lacerations of perineum after labor. 7. How and when would you be justified to induce labor? 8. Describe the application of forceps. 9. What is a cystic mole? Give cause for its formation. 10. When would you use chloroform in labor?

ANATOMY, HISTOLOGY AND EMBRYOLOGY

1. Give a histological description of a hepatic lobule. 2. What is the embryonic origin of (*a*) the kidney, (*b*) the lungs, (*c*) the eyeball. 3. Describe the pancreas. 4. Give histological description of pulmonic alveoli. 5. What displacement occurs in a fracture of the femur at the junction of the middle and lower thirds? Why? 6. Describe the ankle joint. 7. Describe the *diaphragm*. 8. Describe the small intestine. 9. Name the muscles of respiration. Give origin and insertion of any two. 10. Name the abdominal viscera that are (*a*) completely, (*b*) partly, (*c*) without peritoneal investment.

SKIN AND GENITO-URINARY

1. Give symptoms, diagnosis and treatment of a beginning erysipelas of the scalp in an infant one year old. 2. Diagnosis and treatment of erythema multiforme. 3. Diagnosis and treatment of lupus vulgaris. 4. Diagnosis and treatment of perniones. 5. Etiology, diagnosis and treatment of acne vulgaris.

PATHOLOGY

1. What are lymphocytes, poikilocytes, blood-plates? 2. Give the blood changes in myelogenous leukemia. 3. What conditions are induced by (*a*) atrophy and (*b*) hypertrophy of the thyroid? 4. Give the pathology of cancrum oris. 5. Differentiate septic intoxication and bacteremia. 6. What are local infections? 7. Describe the intestinal lesion of typhoid. 8. What is an antitoxin? 9. The pathology of psoas abscess. 10. Define immunity.

DISEASES OF WOMEN

1. Give causes and treatment of pruritus vulvae. 2. Differentiate appendicitis and ovaritis. 3. Etiology, diagnosis and treatment of pyosalpinx. 4. What are the indications *for* hysterectomy? Describe one operation. 5. Give in detail your treatment for complete rupture of the perineal body with accompanying rectocele and procidentia uteri, in a woman past the menopause.

HOMEOPATHIC THERAPEUTICS AND PRACTICE

1. Outline your treatment of typhoid. 2. Name two of the most frequent complications of scarlet fever, with treatment of either one. 3. Give the indications for two remedies *useful* in the treatment of chorea. 4. Etiology, diagnosis and treatment of Bell's paralysis. 5. What symptoms would lead you to prescribe arsenicum, rhus toxicodendron, and sulphur in skin diseases. 6. Give symptoms, diagnosis and treatment of broncho-pneumonia. 7. Differentiate digitalis and aconite in heart disease. 8. Indications for two remedies in acute gastritis. 9. How would you *treat* hypostatic congestion of the lungs. 10. Outline your treatment of infantile convulsions.

HYGIENE AND SANITARY SCIENCE

1. Give in detail the method you would use as health officer in controlling diphtheria epidemic. 2. Is infantile paralysis infectious? If so, give rules for protecting the community. 3. Give incubation period of (*a*) scarlet fever, (*b*) diphtheria, (*c*) variola, (*d*) measles. 4. Give hygiene *and general* care of the patient to prevent infection of attendants and others in close contact with patient suffering from pulmonary tuberculosis. 5. Give general directions for the care of public schools, and care and inspection of school children.

SURGERY

1. Give diagnosis and treatment of strangulated inguinal hernia. 2. Diagnose and give treatment for cholelithiasis. 3. Diagnose and treat simple fracture of clavicle. 4. Diagnose and treat fracture of femur at the junction of upper and middle thirds. 5. How would you manage case of fecal fistula following appendiceal abscess? 6. Give diagnosis and treatment of hemorrhoids. 7. Given severe crushing injury of leg with shock—give treatment in detail. 8. Give diagnosis of and *treatment* for postoperative ileus. 9. Give diagnosis and treatment of carbuncle. 10. Give diagnosis and treatment of acute suppurative appendicitis; in case you operate, what incision would you make, and why?

Book Notices

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. III. Cloth. Price, $3 net. Pp. 174, with illustrations. New York: William Wood & Co., 1910.

In this volume of the "Proceedings of the Charaka Club," of twenty-one papers whose titles are given as having been read since the publication of the second volume, twelve are printed with many rare and interesting illustrations.

Dr. Dana contributes a study of the canticles of old anatomists called "When Apollo Strikes the Lyre," which recalls the days when the scientific world united in the familiar medium of the Latin tongue to celebrate the glories of their contemporaries in verse. When a distinguished professor died or had a festal day his admiring friends and pupils sent him verses from all parts of Europe. Even the works of the great anatomists were celebrated with song. A certain John Antoninus wrote a *carmen* addressed to the ghosts of the gentlemen whose remains had been dissected by Fabricius of Aquapendente, congratulating them on their good fortune in having been dissected by such a master of the art, and assuring them that the repose of their souls had been attended to. Spigelius had a whole *funiculus* of songs contributed to encourage him in his work. Antonio Scarpa, professor in Padua, received the tribute of twenty-five Latin verses written by his pupils and friends. Through three centuries these curious songs were the fashion; even Harvey, Sydenham and Radcliffe in England were celebrated in memorial verses. While the poems do not take high rank as works of art, still they have a great deal higher literary value than the conventional "resolutions" passed by moderns to signify respect for a distinguished departed brother. The custom has passed away, because, as Dr. Dana says, "the learned world has dropped its Latin without having picked up Esperanto;" and, while not maintaining that the formal praise adds anything to the real achievements of the profession, he hints, nevertheless, that physicians might have a better scientific imagination if they were to indulge their sensibilities a little, and not be so technical that they cannot enjoy the esthetic side of life.

Dr. Pearce Bailey makes a delightfully logical diagnosis of what has been known as Flaubert's epilepsy. From the manner in which Flaubert, as well as his friends, describes himself, and from what the novelist records of his peculiar psychology in the romance of "Madame Bovary," Dr. Bailey concludes that the famous fits were not epileptic, but convulsive attacks following emotional crises. Flaubert's physicians left no records of his case. They evidently did not understand it. Some bled him, one threw up his hands and prescribed quinin, another told him to stop smoking, and still another—Hardy, the dermatologist, we understand—called him a hysterical old woman to his face. This is the literary post mortem which Dr. Bailey, more sympathetically, sets forth.

In a paper by Dr. Smith Ely Jelliffe there appears a copy of the first illustration of the fissure of Sylvius, as presented by Franciscus Sylvius in the seventeenth century. So vague were ideas about the work of this remarkable anatomist that the honor of the name of the fissure had often been attributed to Jacobus Sylvius, who lived two centuries earlier. Study of the references makes it possible to trace the picture of a well-descended and highly endowed youth, who studied in Parisian, German and Dutch universities, till at the mature age of 23 he was crowned with laurels, received his cap, ring and book, and was sent forth with a kiss of peace to be one of the most distinguished lecturers and popular physicians of his day. It was said of him that when at 27 he went to Amsterdam the inhabitants acted as though Apollo had descended from Olympus to cure them.

No one reading Dr. Arpad G. Gerster's charming sketch of "Surgical Manners and Customs in the Time of Henry de Mondeville," can fail to appreciate the stages through which surgery has struggled from the middle ages, when it was considered a degrading manual trade, to the present day of luxurious nicety. It is interesting to find this clever old French fourteenth-century bachelor with a big practice grumbling thus: "Sometimes in a whole day I cannot manage to write a single line, being obliged to attend to my lectures, and having in addition to run hither and thither the whole day long to earn my bread, because I must earn everything I need, for myself and my household, by my own work."

De Mondeville's quaint, piquant Latin abounds with caustic humor, and shows deep insight into the devious ways and the cunning of charlatans and tricksters, who "though ignorant, thrive and are magnificently exalted by their practice, while the well-instructed, truth-telling and expert are oppressed, and frequently have to live the life of paupers and mendicants." So little change has there been in human nature, Dr. Gerster says, that "in one of his treatises we find the tricks of the present-day Christian Science beautifully delineated;" and truly, to read the arguments of the monks, concerning the divine nature of health, which de Mondeville satirizes, gives us a feeling that the benighted superstition of the middle ages is flourishing to-day.

To possess this little volume is to loiter at will with the medical great of forgotten ages, or to share the keenly humorous view of the writers of the papers concerning modern situations in medicine.

TEXT-BOOK OF NERVOUS DISEASES FOR PHYSICIANS AND STUDENTS. By Prof. H. Oppenheim of Berlin. Fifth Edition. Authorized Translation by Alexander Bruce, M.D., Physician to the Royal Infirmary, Edinburgh. Volumes I and II. Cloth. Price, 2 guineas. Pp. 1424, with 432 illustrations. Edinburgh: Otto Schulze & Co., 20 S. Frederick St., 1911.

To commend the work of Oppenheim seems like approving a Rembrandt or complimenting a Newton. For years this text-book has been by far the best one in any language. To review it is to recite a catalogue of excellencies. English readers unfamiliar with German are therefore deeply indebted to Dr. Bruce and his Scotch publisher.

The first volume, 602 pages, embraces two parts: a general part (92 pages) and a special part (510 pages). The first, on mode of examination and general symptomatology, contains a wonderful fund of information remarkably well condensed. The second covers diseases of the spinal cord and peripheral nerves, including 147 pages on anatomy and physiology of the cord, localization in the spinal cord (eleven most valuable pages), vessels, etc.

The second volume (819 pages) is devoted to diseases of the brain, the neuroses, diseases of the sympathetic, angioneuroses and conditions of intoxication in which the nervous system is affected. This includes sixty-six pages on the anatomy and physiology of the brain and seventy-two pages on the general symptomatology of brain diseases.

The entire work is a storehouse of thoroughly digested information. The author long has been a contributor to almost every department of the science of neurology and the art of the neurologist. His erudition, keen discernment and practical balance are apparent in the work before us. Every chapter—yes, every page—bears the stamp of the author's keen scrutiny. The field of nervous diseases is covered more completely than by any other treatise on the subject. Affections in which surgical therapy is of importance seem to be particularly well handled. We might instance tumors of the brain and of the cord, dislocation and fracture of the spinal column and the late stages of poliomyelitis.

In many of the better works on diseases of the nervous system the neuroses receive rather scant or, at least, inadequate attention. One might expect this in a German product, but the expectation is not fulfilled in this work. Functional nervous diseases receive consideration satisfactorily full and particularly sane. We especially commend the sections on conditions of anxiety and imperative ideas.

Perhaps it is unnecessary to note that, while the large subjects in neurology receive the most comprehensive treatment, the lesser ones are not neglected. Indeed, often it is these lesser maladies or symptoms which loom large to the patient and to the practitioner who is unfamiliar with them and who fails to find them on a hurried hunt through his library. For instance, erythromelalgia, cephalic, hydrophobic, paralytic and bulbar tetanus, facial hemiatrophy, pachyacria, astasia-abasia, akinesia algera, glossodynia and the cerebral softening of gas poisoning might easily elude the practitioner who has no work like this on his shelves. We approve, too, the introduction of a chapter on general paresis.

The author's extensive and catholic knowledge of the literature is also worthy of note. Americans often have just cause of complaint against their European colleagues, because the latter incline to neglect or underestimate the value of American work; but such complaint cannot be lodged against Oppenheim. A few minutes' glance sufficed to find twenty American names. Indeed, scarcely a neurologist of note in this country has failed of mention in this work. Writers of other countries have received like attention, credit and courtesy.

While the book is satisfying in almost every respect, possibly a more extensive and minutely classified index would have made it more easily useful to some readers. The index, however, is unusually good for a German publication.

In conclusion, we have to record our sincere pleasure in a translation which is a real interpretation: neither a labored effort to transplant foreign idioms bodily, nor a fluent composition lacking in precision. We miss alike the routine phraseology of the hack and the absurd inaccuracies of the technically ignorant. When we say that the translation is fully worthy of the original, we consider that we have rendered full measure of commendation. The numerous illustrations are extremely well done; in some instances better than in the original.

A TEXT-BOOK ON DISEASE-PRODUCING MICROORGANISMS. Especially Intended for the Use of Veterinary Students and Practitioners. By Maximilian Herzog, M.D., Professor of Pathology and Bacteriology in the Chicago Veterinary College. Cloth. Price, $4.75 net. Pp. 644, with 238 illustrations. Philadelphia: Lea & Febiger, 1910.

This book, according to the title, treats of disease-producing microorganisms, and is especially intended for the use of veterinary students and practitioners. According to the material discussed, it seems to be intended for veterinarians, physicians, bacteriologists, pathologists, dairy students, etc. This multiplicity of subjects is a serious drawback, in our opinion, and the book would be more useful if the author had confined himself to the subject of veterinary bacteriology. This part is comprehensive and instructive.

Unfortunately, many errors and misstatements have found their way into the text. Some typographical errors and misspelled proper names have been overlooked. The composition is often not quite clear, and occasional contradictions exist. A few of the erroneous statements are these: The author says that invertase splits saccharose into dextrose. The fact is, however, that dextrose and levulose are the splitting products. Two quarts should read "nearly equal to 2,000 c.c." rather than "1,000 c.c."; and *B. diphtheriæ* is stated to produce gas in the presence of glucose—a serious error.

The chapter on the preparation of culture media is not quite up to date. Agar-agar can be filtered readily within a few hours by using folded filters made of good filter-paper; the author, however, says that it takes several days. It is stated that gelatin must be sterilized in the Arnold; but in modern laboratories the autoclave is used with good success. The clarifying process by the use of egg-albumin is entirely omitted. The author uses litmus as indicator for titrating media; phenolphthalein is more accurate and more modern.

The subject of immunity is not clearly elucidated, especially the part dealing with Ehrlich's side-chain theory, and the description of preparing and testing diphtheria antitoxin is not correct. In the chapter on milk the lactic acid bacteria are hopelessly confused and the term is not used in the usually accepted sense. In discussing the thermal deathpoint of tubercle bacilli in milk, the author does not seem to consider the exact work of Theobald Smith, Rosenau, and Russell and Hastings worthy of mention. The objections enumerated against the pasteurization of milk are erroneous without exception, and the author utterly ignores the most up-to-date work on this subject. The statement that Rochester, N. Y., has experienced a deterioration of its milk-supply through pasteurization seems contradictory to an utterance of the health officer of Rochester, Dr. Goler, that there never was an appreciable amount of pasteurized milk in that city.

Animal diseases and the parasites causing them are treated well. In the preface it is stated that there is no text on veterinary bacteriology in the English language. If this book had been devoted to this subject *exclusively*, therefore, it would undoubtedly have been an unqualified success.

THE RACIAL ANATOMY OF THE PHILIPPINE ISLANDERS. Introducing New Methods of Anthropology and Showing Their Application to the Filipinos with a Classification of Human Ears and a Scheme for the Heredity of Anatomical Characters in Man. By Robert Bennett Bean, M.D., Associate Professor of Anatomy, Tulane University of Louisiana, New Orleans. Cloth. Price, $2 net. Pp. 236, with 26 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

This book is a compilation, with modifications, of a series of articles published in the *Philippine Journal of Science* on the racial anatomy of the different peoples of the Philippine Islands. The author has studied the living form rather than the skeleton as a method of segregating the different types, of which he defines seven, into which all the peoples of the island may be classified anthropologically. The three principal types are the Primitive, which represents most nearly the original or the oriental type; the Iberian, which conforms to a type representing the admixture with Spanish blood, and the Australoid, representing the primary negroid element. The others are not so important, and represent various blends and mixtures of the three principal types. The studies of Filipinos from all parts of the Archipelago show that probably a third of the population is Iberian, owing to Spanish interbreeding over a period of several hundred years. These are more susceptible to tuberculosis, which is quite prevalent among them, whereas the original Filipinos, or the Primitive type, are comparatively free from this disease. The author believes that the Iberian will ultimately disappear, leaving new combinations and blends unlike the original types. The Chinese and Japanese have left their impress on the types, as have also the Indians, whom the author says, no doubt swarmed over the Philippines for many more centuries than did the Spanish. In pursuing his studies and establishing the types the author has made hundreds of observations and measurements of Filipinos, both those in the schools and the natives in the country. He has laid especial emphasis on shape of head, character of nose, teeth and ear, comparative length of limb, character of skin, hair, etc., and position of the umbilicus, which latter the author presents as a point of significance in anthropologic study. The book contains many photographs of Filipino types and the author draws many interesting conclusions as to the place of origin and distribution of the different races of mankind. The work is an interesting contribution to anthropology.

THE AMERICAN YEAR-BOOK. A Record of Events and Progress, 1910. Edited by S. N. D. North, LL.D., Under Direction of a Supervisory Board Representing National Learned Societies. Cloth. Pp. 867. New York: D. Appleton & Co., 1911.

This volume is the first of a projected series of annual publications intended to fill a place distinct from others already in the field. Statistical matter is not given so abundantly, but the attempt is made to give something like a survey of general progress in the lines of "Comparative Statistics," "History and Law," "Government and Administration," "Functions of Government," "Economic and Social Questions," "Industries and Occupations," "Science and Engineering," "The Humanities," and "Current Record." Arrangement is topical, with cross-references and an analytical index. The work seems to be well done in the main, much of the information being presented in a more interesting and available form than is usual in such works of reference.

So far as preliminary examination shows, the only decidedly disappointing feature is the subdivision of "Literature and Language" under "The Humanities." Considering the fact that almost no attempt is made to give the most notable original works of the year in any language, or in any department of pure literature, the general reader will probably grudge the space given to language text-books, and wonder that it has been thought necessary to mention translations into English of foreign works possessing neither timely interest nor transcendent importance.

In the section on medicine and hygiene, covering twenty pages, Alexander Lambert briefly reviews the progress in medicine, surgery, public health, medical education, nursing, vital statistics, etc., and gives a list of the important medical books published during the year. Most attention is given to tuberculosis, poliomyelitis and others of the infectious diseases, the important discoveries and developments in research and the provisions made by endowment for the promotion of these. Among the many things worthy of mention the author, with judgment and discrimination, has selected those most important and of largest bearing, and has editorially commented on them in an interesting way. The article fairly reflects the status of those subjects at the end of the year.

The Diseases of China, Including Formosa and Korea. By W. Hamilton Jefferys, M.D., Univ. of Pennsylvania, Medical Missionary in China, and James L. Maxwell, M.D., London, Medical Missionary in Formosa. Cloth. Price, $6 net. Pp. 716, with 360 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This book will be of value to medical missionaries or practitioners wishing to take up the practice of medicine in China. It does not purport to be a complete text-book on the diseases of the East, but reviews and compares interestingly the prevalence of many of the world-wide epidemic diseases, as plague, cholera, malaria, tuberculosis, syphilis and gonorrhea. The differences in the requirements of practice in China as compared with Western countries are pointed out, and the authors draw from their long experience in their presentation of the subjects. The greater prevalence of tuberculosis is noted, the opium habit is interestingly discussed, hospitals throughout China and Formosa, their equipment, and their work, are pictured and described, and the needs of the country in a medical way are set forth. The affections peculiar to the country, and unusual forms of more or less familiar diseases or lesions, as of elephantiasis, various tumors, syphilis and skin affections, and also of gynecologic and other surgical affections, due largely to neglect of proper treatment, are described. Metazoan and protozoan diseases are given considerable space.

Perhaps the most valuable suggestion in the book is as to the immense field offered for research and comparison of diseases occurring in new environment and among peoples with different habits, diet, etc. The experience of the authors as described in this book will undoubtedly be drawn on in future studies of many diseases.

An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus. By Astley Paston Cooper Ashhurst, M.D., Prosector of Applied Anatomy in the University of Pennsylvania. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Cloth. Price, $2.75 net. Pp. 163, with 150 illustrations. Philadelphia: Lea & Febiger, 1910.

The subject-matter of this little volume is divided into two parts; the first deals with the anatomy, mechanism, complication and treatment of these fractures, and the second contains the clinical histories in detail of the fifty-six cases which form the basis of this study. The first part shows that the author has done a great deal of original work and has devoted much time and study to the elucidation of the pathogenesis of these fractures.

The method of making a proper examination of the elbow for diagnostic purposes and the method of interpreting skiagraphs of this region are very lucidly explained. The author earnestly advocates the hyperflexed position in the treatment of most of the varieties of fracture involving the lower end of the humerus, and his arguments in favor of this position are quite convincing, provided one remembers the most important rule in this connection, which is not to maintain the arm in any position without change sufficiently long to permit of fixation of the point in that position.

Fractures of the elbow are so common in children and the results following are so frequently not what they should be, that a careful study of this little volume is earnestly recommended to all who treat these conditions.

Lessons on the Eye. For the Use of Undergraduate Students. By Frank L. Henderson, M.D., ex-President of the St. Louis Medical Society (1905). Fourth Edition. Cloth. Price, $1.50 net. Pp. 238, with 138 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This little book, after briefly taking up the anatomy of the eye and the surrounding structures explains in an elementary way the physics of light, of prisms, lenses, etc.; it explains refraction and the various errors of refraction, describes disorders of the ocular movements, and discusses the diseases of the different structures of the eye, and their treatment. The author states that the book is intended as a substitute for the students' class-room notes, and it serves that purpose very well. The book is well illustrated, and should prove an aid to the medical student.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minn., 1905-1909. Cloth. Price, $5.50 net. Pp. 668, with 228 illustrations. Philadelphia: W. B. Saunders Co., 1911.

This collection of the papers of Drs. William J. and Charles H. Mayo and the other members of the staff of St. Mary's Hospital, previously published elsewhere, brings into compact form in one volume a mass of material on surgical subjects, and investigations of the pathology of surgical diseases treated in that hospital from 1905 to 1909. It is indexed as to authors and subjects, and affords a convenient source of reference to those wishing to look up what has been done at St. Mary's.

Medicolegal

When Expert Witnesses are Entitled to Special Compensation

The Supreme Judicial Court of Maine holds, in the consolidated cases of Gordon, O'Neil and Twitchel vs. Conley (78 Atl. R. 365), that, under certain circumstances, expert witnesses are entitled to reasonably special compensation. Here the plaintiffs were employed by the defendant or her attorneys to make an examination of her physical condition for the purpose of enabling them to qualify as medical expert witnesses for her in a personal injury case she had against a railway company. They were not summoned, but appeared voluntarily at the request of counsel, without any agreement as to their compensation, and by special request remained in court three days to listen to the experts on the other side, and testify in rebuttal, if necessary. The defendant contended that they were entitled to only the statutory compensation of ordinary witnesses.

It will be observed, the court says, that the question raised was not whether an expert witness can be summoned into court in the regular way, and be required to give in evidence all the knowledge he may have acquired as an expert on a particular subject under investigation, for the regular witness fee, but whether, having been employed by a party to give special attention to the investigation of a matter out of court, and then to appear in court, not only to testify as an expert witness, but to remain in court for a specific length of time with loss of regular occupation, not by order of the court, but by request of the party employing, a witness is entitled to receive reasonable compensation beyond the regular witness fee for such services. If a party saw fit to summon an expert witness to testify in court without any knowledge as to what he might say, whether the witness would be required for the usual fee to give all the expert knowledge he might have on the subject under investigation did not arise here. That was not the case before the court.

A witness under subpena after testifying for an hour or half an hour might be excused by the court and enabled to pursue his ordinary occupation, instead of losing three days. He is under no contractual obligation whatever to the party calling him. He cannot even be unwillingly interviewed before testifying. He takes the stand, testifies, and leaves it. That is all he is required by law to do. The court, of course, could require him to remain in attendance, but it is an unusual case in which an expert witness, capable of earning perhaps $100 a day, would be required to remain at $1.50 per day for the benefit of private interests. Hence it appears that a witness summoned into court, and for non-appearance subject to contempt, stands in an entirely different relation to the court and the parties from the witness who appears in court without summons, but on a special agreement not only to prepare and testify, but to remain in court for the special benefit of the party calling him. Such a witness performs services outside the statutory requirement, and is entitled to whatever his services are reasonably worth above the legal fee due ordinary witnesses. The plaintiffs rendered bills for $50 per day, but the jury allowed them $37.50 per day, which, in view of their reputation and skill, is deemed entirely reasonable.

Requisites for Holding Brothers and Others for Bills—Inadmissible Evidence

The Supreme Court of Rhode Island holds, in Churchill vs. Hebden (78 Atl. R. 337), that, the evidence failing to prove either an express or implied promise of the defendant to pay for an operation for appendicitis performed on his brother, a verdict was properly directed in the defendant's favor. It appeared that the patient was a man 29 or 30 years of age, who lived with wife and children in one city, while his brother, the defendant, was a resident of another city. The family physician testified that he telephoned to the surgeon who performed the operation, and made arrangements for it, but did not remember that any thing was said about the fees or who should pay them. The patient testified to having objected to having the operation performed and having asked the family physician about the cost, stating that he was the one who would have the bill to pay, and being told not to mind about the bill, it being a little matter that could be fixed up afterwards. The surgeon who performed the operation died before the trial of the case, which was revived in the name of his executrix, so that his testimony was lacking. There was, however, no denial that the operation was performed, or that the charge for it was $500, but only as to this defendant's ability—a denial that he had agreed to be responsible for the payment for the operation.

With the sole question thus being whether the defendant had employed the surgeon, or had agreed to pay for his services rendered to his brother, a question for the jury to pass on, the court holds that there was no error in refusing to admit in evidence the surgeon's books of account. The burden of proof was on the plaintiff to satisfy the jury by a fair preponderance of the evidence of the employment of the surgeon by the defendant. To show the entry on the books would merely show the deduction reached by the surgeon through his sources of information as to the circumstances surrounding the transaction. Those circumstances were to be submitted to the jury, who were entitled to consider them without knowledge of the inferences drawn therefrom by either party to the transaction. The parties necessarily took an interested view of the situation. The jury should consider the same without prejudice.

Nor was there error in excluding evidence as to other contracts or payments made by the defendant, as, for example, who paid the nurse for her services, or whether the defendant engaged or paid the hospital wherein the operation was performed.

There being no testimony of an express promise to pay, the jury were correctly instructed that, if the plaintiff was entitled to recover in this case, it must be by virtue of certain circumstances by which the law would imply a promise on his part to pay for the services. For instance, if a husband calls a physician to attend his wife, being under obligation to take care of his wife, the law would imply a promise to pay for those services, even though he made no promise. If a father calls a physician to attend his minor son, he being under obligation to take care of that minor son, the law would imply a promise to pay for those services. But where a mere stranger —and brothers are strangers in that respect—where a mere stranger calls on a physician to attend a third person, whom the one calling the physician is under no obligation to take care of, then the law will not imply any promise to pay for the services rendered to the third person.

Powers of Courts on Appeals from Board Decisions Refusing Licenses

The Supreme Court of Washington, In re Littlefield (112 Pac. R. 234), determines the powers, under the 1909 statutes of that state, of the courts on appeals from decisions of the State Board of Medical Examiners refusing licenses to practice medicine and surgery, and affirms a judgment directing the board to issue the license applied for in that case.

The record, the court says, showed that the license was refused by the board principally for the reason that the applicant did not obtain a rating equal to 60 per cent. on the subjects of histology, pathology and general diagnosis, which he was required to obtain under the statute before a license could issue to him. The first contention on the part of the board was that the court had no jurisdiction to hear this case; that it could not administer the provisions of the medical act as applied to appeals from orders of the board denying a license after examination, because, it was asserted, it is familiar law that, if the court cannot administer the law on a subject brought before it by virtue of the appellate statute, the court has no jurisdiction, to sustain which announcement of the law many cases were cited. But this was assuming the very question at issue. It seems to the Supreme Court that under the statute the court has the right to administer the provisions of the medical act, for the statute specially provides for an appeal from the decisions of the board. Section 13 of the act provides that, "In any case of the refusal or revocation of a license by the said board under the provisions of this act, the applicant whose application shall be so refused, and the licentiate whose license shall be so revoked by said board, shall have the right to appeal from the decision so refusing or revoking such license within thirty days after the filing of such decision * * * to the superior court," etc. And provision is made for an appeal from the decision of the Superior Court to the Supreme Court.

It was contended that, if this statute was to be given force at all, it must be construed to the effect that the appeal is not from the facts in the case or the merits of the case, so far as the examination is concerned, but only for the purpose of having determined any questions of law arising on the examination or in connection with the same. But the statute is a general one, and confers the general right without any limitation of this kind. So far as the statute itself is concerned, it does not remove from the operation of the appeal questions of fact, any more than it does questions of law.

But it was insisted that it must be construed with reference to the asserted fact that it would be a travesty for the superior court to undertake to pass on the qualifications of applicants to practice medicine; that it would resolve itself simply into the hearing of expert testimony on questions brought before the court. Difficulties of this kind are presented in the trials of many cases. A common instance is where a defense is based on the alleged insanity of a defendant in a criminal action. The testimony of alienists and other scientists is the controlling testimony in the case. The legislature evidently was not willing to leave the exclusive and final determination of this question to the discretion of the examining board, but evidently thought that justice and public policy demanded that there should be a review of the action of this tribunal.

It is true, there are some inconsistencies in the act; one of which is the fact mentioned by the board, that there may be an oral examination which it would not be possible to transmit in the record. But that it was intended by the legislature that the evidence generally should be transmitted to the Superior Court is evident from the provisions of the statute, for the law requires that the secretary shall within ten days after the service of such notice of appeal, transmit to the clerk of the Superior Court to which such appeal is taken, a certified copy, under the seal of said board, of the decision of said board, and the grounds thereof in the case of the refusal of the license; that the clerk of the court shall docket such appeal cases, and that they shall stand for trial in all respects as ordinary civil actions, and like proceedings be had thereon. It also provides that on said appeals said causes shall be tried *de novo* (anew), which excludes the idea advanced that only questions of law shall be passed on by the Superior Court. It provides that the examination papers shall form a part of the records of the board, and shall be kept on file by the secretary for a period of one year after each examination. All these and other provisions of the statute tend to show that the preservation of such records is in the interest of appeal.

Again, it was contended that, if the statute is to be literally construed, the proper procedure was not followed in this case, for the court only passed on the question in the main as to whether the applicant had been properly rated in his examination on the subjects of histology, pathology and general diagnosis, while the other subjects on which he was examined were not examined by the Superior Court; that a trial *de novo* is a trial anew, and that a trial anew means a trial of all questions that were involved in the case below. But it seems to the Supreme Court that this is not a broad view of this statute. Undoubtedly a trial *de novo* does mean, and is generally understood to mean, a trial anew; but it means anew, of course, only as to the questions in issue. In this case, so far as the applicant was concerned, he was satisfied with the rating he received on the other subjects of examination, and there was no objection made to them by the board, so that they were really not in issue in the case, and the case was tried *de novo* (anew) so far as the issues were concerned. Finding no reversible error, the judgment directing the issuance of a license is affirmed.

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
Am. Assn. Genito-Urinary Surgeons, New York, May 1-3.
American Dermatological Association, Boston, May 25-27.
American Gynecological Society, Atlantic City, May 23-25.
American Laryngological Association, Philadelphia, May 29-31.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Therapeutic Society, Boston, May 11-13.
Arizona Medical Association, Bisbee, May 2-5.
Arkansas Medical Society, Fort Smith, May 2-5.
Association of American Physicians, Atlantic City, May 9-10.
California, Medical Society of State of, Santa Barbara, April 18.
Connecticut State Medical Society, Hartford, May 24-25.
District of Columbia, Medical Association of, Washington, April 25.
Florida Medical Association, Tallahassee, May 10.
Georgia, Medical Association of, Rome, April 19-21.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Kansas Medical Society, Kansas City, May 3-5.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Missouri State Medical Association, Jefferson City, May 16-18.
Montana State Medical Association, Butte, May 10-11.
Nebraska State Medical Association, Omaha, May 2.
New Hampshire Medical Society, Concord, May 11-12.
New York, Medical Society of the State of, Albany, April 18.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
South Carolina Medical Association, Charleston, April 19-21.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-Third Semi-Annual Meeting, held at St. Joseph Mo., March 16-17, 1911

The President, Dr. Donald Macrae, Council Bluffs, Ia., in the Chair

The Present Status of Salvarsan

Dr. Alfred Schalek, Omaha: It is premature and risky to let a patient with syphilis go with one or only a few treatments with salvarsan. Syphilis is still a serious disease which requires prolonged and thorough attention. Salvarsan has not yet been proved to be greatly superior to mercury, and, while it acts more rapidly on small lesions and may be of benefit in cases in which mercury is powerless, only time can tell whether or not the results will be more permanent.

DISCUSSION

Dr. C. A. Good, St. Joseph, Mo.: Salvarsan quickly causes disappearance of the primary chancre and mucous patches, but it is doubtful whether or not it will drive the spirochetes completely from the body. Two or three interesting observations have been made of children with congenital syphilis who were given salvarsan and later died, and it was found that the organisms had practically disappeared from all the internal organs where usually they are found in abundance, with the exception of one instance, in which they were found in the lungs.

Dr. T. M. Hall, St. Joseph, Mo.: There has been a tendency to promise a syphilitic that one injection of salvarsan will practically cure him. This is unfortunate, because, if later the disease is not annihilated by one injection, the man is imbued with a false idea as to his true condition.

Dr. F. S. Mason, New York City: While salvarsan may not be so good as mercury, when it is used the acute symptoms are relieved quickly. A woman who had the acute lesions of syphilis and was attending to her business received injections of salvarsan and within a week practically all the lesions disappeared, so that she could not infect anyone else.

Difficulties Encountered in Late Operations for Intestinal Obstruction

Dr. Herman E. Pearse, Kansas City, Mo.: By the following procedures patients with late cases of intestinal obstruction can be saved: 1. Empty the bowel at first operation and allow time to recover from toxemia before resection is practiced unless gangrene should forbid (ten-minute operation). 2. Do this by employing the long intestinal tube and emptying the distended bowel as the first step after finding the obstruction; close the wound after providing escape. 3. By the use of the glass tube of Paul or the rubber tubes with depressed external grooves, as advised by Marro, the toxic fecal matter may be conveyed beyond the wound, thus securing primary union and safety from abscess. 4. The bowel edges may be brought out of the incision beyond the skin and the open treatment by a nurse and water washing may be substituted for the closed method of filthy gauze and pads of cotton. 5. A second and even third operation may be [illegible] to complete the work when the patient has recovered from effects of the obstruction and vomiting.

DISCUSSION

Dr. John E. Summers, Omaha: Sometimes in cases of strangulated hernia, when gangrene is present, one can establish an artificial anus by cutting into the gut and allowing this opening to remain until the circulation is reestablished; then an operation may be done later. If drainage is carried out, it is wise to wash out the gut through a tube.

Dr. C. Lester Hall, Kansas City, Mo.: I differ with Dr. Pearse in regard to making the incision. We can open the abdomen more widely and freely and reach parts of the abdominal cavity better through a median incision, and we have less trouble through that incision in the after-treatment, and we get better union there than in any other part of the abdominal wall.

Dr. O. Beverly Campbell, St. Joseph, Mo.: I agree with Dr. Pearse that a good place to make the incision is about the border of the right rectus, because there is more trouble in the right side in intestinal obstruction than anywhere else, and the fact that one wants to drain in the median line; therefore, I would favor incision at this place in most cases.

Dr. S. H. Smith, Omaha: In a case of intestinal obstruction in a woman, the obstruction was caused by three constricting bands around the sigmoid flexure. These bands were cut. There were adhesions around the cecum which were broken up. Three days after the operation, the patient had natural bowel movements without the use of purgatives, and she has not had to take any purgatives since.

Dr. F. H. Clark, El Reno, Okla.: Shock in abdominal operations comes more from rough handling of the intestines than from any other one thing that enters into surgical work in the class of cases under discussion. A prominent surgeon told me not long ago that he attributed his remarkable success to two things: first, he had acquired a technic which enabled him to get in and out of the abdomen in a very short time; and second, he had learned to handle the intestines just as gently as it was possible to do it.

Dr. John P. Lord, Omaha: When we have a gangrenous gut to deal with, I believe that it should be excised, then we have an open bowel and can drain. We should not pack it with gauze and cover it with rubber tissue. The Murphy button tempts one to make an immediate anastomosis, which would be the means of causing the patient to suffer from the toxemia that kills so many of these patients who have so-called secondary shock. I do not believe in secondary shock unless there is secondary hemorrhage. The tube is a good thing, but it tempts us to do too much in the very cases that require drainage without too much manipulation.

Dr. S. G. Zink, Leavenworth, Kan.: I have had three cases of fecal impaction, and I have found that by using a 25 per cent. solution of peroxid of hydrogen, and putting the patient in the knee-chest or in the exaggerated Sims position, with the head low down, one or two injections of 8 ounces, followed by irrigation, would break up these fecal masses.

Dr. C. H. Wallace, St. Joseph, Mo.: For the average surgeon, who sees these cases only occasionally, I am satisfied that the simpler method of drainage by the introduction of a large tube will result in a greater saving of life than more extensive work.

Dr. Jacob Geiger, St. Joseph, Mo.: Early and correct diagnosis is most important. It is easy for us to say what to do, but every case is a law unto itself, and when we have a case of acute intestinal obstruction and open the abdomen and feel the pathology, then we have to use our brains to determine what is best to do.

Dr. V. L. Treynor, Council Bluffs, Iowa: I believe that if efforts were directed toward a more certain and early diagnosis it would simplify the treatment of these cases very materially. I do not like to hear the internists criticized for so-called neglect when the surgeon himself is sometimes incapable of making a diagnosis when he is called early.

Dr. C. C. Conover, Kansas City, Mo.: Modern methods of diagnosis have improved so wonderfully in the last four or five years that most internists can make a diagnosis of intestinal obstruction, and need not wait and call in a surgeon to tell them what is the matter with the patient.

Dr. H. M. Clark, Platte City, Neb.: We as country practitioners call in surgeons and they operate on patients with intestinal obstruction and lose 40 or 50 per cent. of them; we can do nearly as well ourselves.

The Roentgen Ray in Postoperative Cases

Dr. R. D. Mason, Omaha, showed the value of the *x*-ray in cases in which operation has been done, and advised its use in all postoperative cases in which malignancy is suspected. He pointed out the fallacy of waiting until a return of the disease before beginning the use of the rays.

DISCUSSION

Dr. Alfred Schalek, Omaha: Every cancer operated on should have postoperative *x*-ray treatment.

Dr. John P. Lord, Omaha: I have an abiding faith in the therapeutic value of the *x*-ray in the treatment of cancer in selected cases in which it can be reasonably expected to do some good, and practically every case should receive the benefit of this postoperative treatment.

The Rôle of Tuberculin in the Diagnosis of Pulmonary Tuberculosis

Dr. Logan Clendening, Kansas City, Mo., reviewed the methods of early diagnosis of pulmonary tuberculosis and said: 1. In infants and children the v. Pirquet test is of great value and positive, the younger the child the higher its value; it is somewhat less valuable if negative. 2. In adults there is no method of using tuberculin for diagnostic purposes that has uniform value in all cases; the subcutaneous method is probably the best.

Colica Mucosa

Dr. J. M. Bell, St. Joseph, Mo.: My experience with this disease leads me to believe the enteroptotic habit, plus autointoxication and constipation, is the foundation on which the disease is based; the neurosis being secondary. When the digestive tract is restored, a normal state of equilibrium is obtained.

Local Anesthesia with Quinin and Urea Hydrochlorid

Dr. C. M. Nicholson, St. Louis: I am convinced by experience with thirty-two cases that quinin and urea hydrochlorid is destined to occupy a prominent position as a local anesthetic. The greater length of time required after the injection of the quinin and urea hydrochlorid before the anesthetic effect is fully manifest is its principal disadvantage.

DISCUSSION

Dr. John P. Lord, Omaha: I have given this anesthetic in as many cases as Dr. Nicholson has mentioned and can unqualifiedly endorse it. This winter I used it in resecting the ribs in cases of empyema, and it worked admirably.

Dr. J. P. Standley, Bedford, Iowa: I have repeatedly operated on hemorrhoids with this anesthetic with satisfactory results.

Dr. J. H. Dillon, Auburn, Neb.: I wish to speak highly of this anesthetic, although I have only used it in two or three cases. I have also seen satisfactory results with it in the hands of others.

Dr. E. H. Thrailkill, Kansas City, Mo.: I have used quinin and urea hydrochlorid with good results, but I prefer stronger solutions than are used by some practitioners. After operations on the rectum I have used this anesthetic to prevent postoperative pain.

Dr. R. C. Dorr, Batesville, Ark.: I do not believe that there is any major surgical work done with a local anesthetic without pain.

Dr. A. J. McKinnon, Lincoln, Neb.: I operated on a man for hemorrhoids, using this anesthetic, and after the operation the patient rode home in a buggy.

Suggestions for the Application of Lactic Ferments in Genito-Urinary Work

Dr. F. S. Mason, New York City: These ferments are useful in treatment of diseases or infections of the gastro-intestinal tract, since they inhibit the growth of the pathogenic organisms. Drs. Holbrook Curtis and Otto Glogau of New York have used suspensions of lactic ferments in bouillon successfully in treatment of suppurating discharges from sinuses and nasal passages, as well as from the ear.

Peritonization in Abdominal and, More Particularly, Pelvic Surgery

Dr. John E. Summers, Omaha: By peritonization or peritoneoplasty is meant the covering over by peritoneum of all tears, lacerations and losses of substance of the peritoneum due to surgical procedure. In some cases the peritoneum may be separated from the abdominal wall, commencing at the lower angle of the incision toward the space of Retzius, or at the sides, a great part of the bladder being likewise freed. These flaps are made large enough to cover over the posterior wall of the pelvis. In other cases, the technic consists in transporting the sigmoid flexure across the pelvis and suturing it in such a way that all raw surfaces are covered over. The sigmoid is only fixed below and is nearly always sufficiently mobile to be carried across the pelvis to the right side as far as the cecum. When the uterus is preserved, the sigmoid is sutured to the lateral walls of the excavation and across the fundus of the uterus. When the uterus is sacrificed, the sigmoid is sutured to the lateral walls of the excavation and to the bladder. Drainage should be made through the vagina. Amann emphasizes the fact that this technic is particularly advantageous when septic pus or genital abscesses communicate with the intestine—for example, a pyosalpinx, or a suppurating tumor of the ovary, opening into the large bowel; and also when genital abscess coexists with perforative appendicitis. The intestinal sutures are situated under the protection of the cavity drained and are extraperitoneal. Two vital principles are involved in peritoneal autoplastic surgery: first, the more vital principle, the prevention of infection; second, the prevention of postoperative intestinal obstruction.

Care of the Hypertrophied Prostate

DR. F. H. CLARK, El Reno, Okla.: The responsibility for early diagnosis and advice must, of necessity, rest with the family physician. While this condition usually comes on with advanced age, it may occur even in childhood. Operative procedure is the only treatment that offers hope for permanent cure and a comfortable life after operation. The operation which presents the lowest mortality is through the lower perineal route. We should never forget that 10 per cent. of these hypertrophied prostates become malignant if allowed to go on, and that our only hope of avoiding that is an early operation. We must not forget that we should continue to use sounds on these patients following operation until we are certain that there will be no contraction of the scar formed that may serve as an impediment to the free flow of urine.

Other Papers Read

The following papers were also read: "The Decay of Nations," by Dr. H. Stern, New York; "Should Venereal Infections be Classed and Reported as Contagious Diseases?" by Dr. T. M. Paul, St. Joseph, Mo.; "Extreme Edema of the Cecum and Ascending Colon Following Gangrenous Appendicitis," by Dr. L. J. Dandurant, St. Joseph, Mo.; "An Unusual Case of Dilated Capillaries," by Dr. W. Frick, Kansas City, Mo.; "Treatment of Tuberculosis," by Dr. G. N. Ryan, Des Moines, Iowa; "Acute Anterior Poliomyelitis," by Dr. L. A. Skoog, Kansas City, Mo.

CLEVELAND ACADEMY OF MEDICINE

Regular Meeting, held March 17, 1911

DR. WALTER B. LAFFER in the Chair

Gynecologic Problems of Interest to the General Physician

DR. BARTON COOKE HIRST, Philadelphia: Too many lives are lost in this aseptic era from puerperal infection. A well-equipped obstetric bag with sterile contents including gloves, the shaving of patients, cleansing of the vulva before examination and scrupulous cleanliness in the after-management would unquestionably reduce the morbidity and mortality of childbearing. Moreover, physicians should insist on more stringent regulation and instruction of midwives. I wish to emphasize two points in the treatment of puerperal infection —the value of antistreptococcus serum and the possibilities of the operative treatment of pelvic infections. As to lacerations of the birth canal, I believe that only by immediate repair, or at least repair within five days after delivery, can all the injuries be successfully repaired and their consequences avoided.

About one-fifth of all women who consult physicians because of diseases peculiar to their sex, are suffering from retrodisplacements. Every woman after confinement should be subjected to two examinations—one at the end of three weeks when she begins to walk, and the other at the end of the puerperium, six weeks after delivery. If displacement is discovered after the first examination it can be cured, in a certain percentage of the cases, by use of the knee-chest position twice a day. If it persists, at the end of six weeks, a pessary with Swedish exercises and massage will effect a cure in an additional number of the cases. If in spite of this treatment the malposition still persists, early operation should be advised. I must still harp on the sinister significance of genital hemorrhage, especially in the middle-aged, in relation to carcinoma. It cannot be too strongly emphasized.

In the United States 2,500 women die every year from eclampsia—about six times as many as should legitimately do so, if the condition were properly treated. We should watch more carefully for pre-eclamptic symptoms by urinary and blood-pressure examinations—especially the latter as the blood-pressure is invariably raised. It is easier to prevent eclampsia than to cure it. The patient should be placed in a hospital, if possible, and energetic diaphoresis employed from the start. It is a fallacy that the first step in treatment is evacuation of the uterus.

As to moderate-sized fibromyomata, if they are not causing pressure symptoms or excessive hemorrhage, there is always ample time, years in fact, to observe the rate of growth, to watch for untoward symptoms, and to decide whether the neoplasm is a serious detriment to the patient or not. This is, I believe, the right course to follow when practicable. In ectopic gestation, I believe in immediate operation, as I have too vivid a recollection of patients who have bled to death before I could reach them. It is the height of folly to wait for a reaction that may never come. In placentia prævia there are certain rules which might be remembered with advantage. A vaginal tampon, if big enough, will temporarily check the hemorrhage until other measures can be decided on. Version followed by a slow extraction of the fetus is applicable in a majority of the cases. In some cases of sterility, resulting from an infantile uterus, I have obtained excellent results by local electrical stimulation. This is a therapeutic measure that is not so generally appreciated as it might be.

DISCUSSION

DR. HUNTER ROBB: Only by the best aseptic technic can infections, following labor and abortion, be prevented. Every physician should have good surgical training. In my experience, about one-half of these infections are gonorrheal in origin. In perineal tears, if the patient's condition is good, I advise immediate repair. I have never seen a patient bleed to death in ectopic pregnancy; though I have seen many "operated to death." I do not believe in immediate operation. Some patients will stand it, but the majority are in deep shock and are too weak to stand an immediate operation. In the past year, I have had eight more of these cases and the patients all recovered, being operated on in from two or three days to a week or so. If the patients are properly stimulated following rupture of the pregnancy they will not bleed to death. In my experience, a majority of cases of sterility are due to gonorrheal inflammation of the tubes.

DR. W. H. HUMISTON: Retroflexion of the uterus is the most common complication following labor. The majority of lacerations of the cervix heal of themselves, but if there is a mild degree of sepsis present healing is not so rapid and there is a resultant subinvolution of the uterus, with subsequent retrodisplacement. I treat such patients by curettage and repair of the cervix, getting the uterus into position in the knee-chest position, and applying a properly fitting pessary. The patient is kept in bed and is not allowed to sleep on the back. After getting up, the pessary is removed in from eight to ten weeks. In cases of rupture in ectopic pregnancy I wait no longer than it takes me to get the patient into the operating room, and for me to get into the abdomen. By such treatment I have had no fatalities. About 90 per cent. of my operative cases are gonorrheal in origin. In acute cases I believe in radical measures. I put the patient to bed, shave the vulva, wash and cleanse out the vagina with soap and bichlorid of mercury solution. Then I carefully cleanse the cervix with alcohol and swab the cervix and canal with compound tincture of iodin. The vagina is then dried and powdered with boric acid, seven parts to one part of iodoform. After this the uterus is packed with gauze. After four such treatments, in eight days I begin the use of douches of permanganate of zinc. Internally the patient gets a mild diet and hexamethylenamin.

DR. W. H. WEIR: How does Dr. Hirst use antistreptococcus serum? Does he ever use it prophylactically?

DR. J. E. TUCKERMAN: Some cases of retrodisplacement are due to undue anxiety on the part of the physician to keep the patient on her back, following labor.

DR. LILLIAN TOWNSLEE: I used the electric current in one case of infantile uterus. After its use for six months the organ had increased greatly in size and the patient became pregnant, later giving birth to a normal child. I do not favor immediate operation for ruptured extrauterine pregnancy.

Dr. B. C. Hirst: I have seen at least four or five patients who have bled to death following delay in operation for ruptured ectopic pregnancy. At any rate, the patient should be in a hospital where she can be carefully watched. In using serum in the treatment of septicemia I use 80 c.c. at a dose; this is four times the dose recommended by the makers. This dose should be repeated four times a day and may be used for two or three days. Possibly better results are achieved with the use of fresh antistreptococcus serum than with older samples. I agree partly with Dr. Tuckerman that patients may be kept too long in bed; however, I do this with a note of warning, for there is danger of later prolapse if the patient gets up too soon.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

April 1

1 *Vagaries of the Pneumococcus. W. H. Thomson, New York.
2 The High Death-Rate from Diphtheria in the United States. E. C. Hill, U. S. Army.
3 *What Is Rheumatism? H. C. de V. Cornwell, New York.
4 Arthritis Deformans and Its Relation to Intestinal Putrefaction. E. E. Cornwall, Brooklyn, N. Y.
5 The Hospital and the Young Physician. W. E. Darnall, Atlantic City, N. J.
6 *Source of Error in the Diazo Reaction. S. Levinson, Brooklyn, N. Y.
7 A Case of Blood Extravasation Into the Sclera from Indirect Violence. F. Griffith, New York.
8 Short Talks with My Students and Others: Random Suggestions for the Younger Practitioners. R. H. M. Dawbarn, New York.

1. **Vagaries of the Pneumococcus.**—Thompson has become convinced that creosote carbonate, in 15-grain doses, given every two or three hours, in a specially prepared emulsion which is so well borne by the stomach that he has known it to stay down when everything else was rejected, *changes the* course of the fever so that in 70 per cent. of *the cases it ends* by lysis instead of by crisis. The extreme susceptibility of the pneumococcus to the faintest trace of phenol may allow of this preparation being regarded as a true blood germicide. Thomson has seen no injurious effect produced by it even when its absorption causes the urine to become dark. The formula for this emulsion is:

℞	gm. or c.c.		
Acaciæ	18		ʒiv
Aquæ	18	or	ʒivss
f. mucilaginem tunc adde			
Creosoti carbonatis	21	33	ʒv, mxx
Misce et adde:			
Glycerini	30		℥i
Aquæ menthæ piperitæ ad.......	240		℥viii

Sig. One tablespoonful (15 grains of creosote carbonate) *every* 2 or 3 hours.

This is also his favorite prescription for pulmonary phthisis, *not* that he expects it to be operative against the tubercle bacilli, but *against* the pyogenic microorganisms whose alliance with the tubercle bacilli in the lungs is so disastrous.

3. **Rheumatism.**—In speaking of rheumatism, Cornwell says we should never employ the term in the description of a symp*tom, but should* limit its application to the conception of an *acute, constitutional,* self-limited infectious process, with a practically incontestable *bacterial etiology,* a proneness to find focal expression in the joints (arthritic type), or the endocardium (endocardial type), and to a less extent in other tissues, and a tendency to react specifically and characteristically to medication by the salicylates.

6. **Error in the Diazo Reaction.**—When a urine shows the diazo reaction, Levison says it becomes necessary, in order to avoid mistakes, to ascertain whether *the reaction* is not due to phenolphthalein. As the presence of this drug can be easily demonstrated by addition of alkalies it is only necessary to test the urine with a few drops of *some alkali;* a pink or reddish color shows the presence *of* phenolphthalein. If this reaction is negative we have a true diazo reaction. But in case this reaction is positive (the urine becomes red after the addition of alkalies), we may have the phenolphthalein reaction alone, or a true diazo reaction, together with the reaction produced by phenolphthalein. In order to test the urine in such a case of a suspected "mixed" reaction, add a few drops of some acid to the test tube in which there is a positive diazo reaction. If the color disappears altogether and appears *again* only after the addition of enough alkali to render the mixture alkaline, the reaction is due to phenolph*thalein alone. If after the addition* of acid the color becomes lighter, but does not disappear completely and becomes more intense by addition of enough alkali to render the mixture alkaline, the reaction is due to the substance or substances producing the true diazo reaction and also to the presence of phenolphthalein.

New York Medical Journal

April 1

9 Trachoma. S. H. Brown, Philadelphia.
10 A Hurried Bird's-Eye View of the Problem of the Modern Care of the Insane. M. Solomon, Washington, D. C.
11 Improvements in the Optical Construction of Cystoscopes. L. Buerger, New York.
12 The Problem of Prostitution and Venereal Diseases in New York City. F. Bierhoff, New York.
13 *A New Method of Direct Transfusion of Blood. A. L. Soresi, New York.
14 *An Unusual Case of Infantile Paralysis. H. G. Harris, New York.
15 A Case of Diabetic Glaucoma and Operation. S. Moskowitz, New York.
16 Treatment of Whooping-Cough. C. L. Henriques, New York.
17 Infundibulin in Hemorrhage Due to Uterine Carcinoma. J. C. Scott, Philadelphia.

13. **Direct Transfusion of Blood.**—The *instrument devised* by Soresi is said to do away with the necessity of *opening the* blood-vessels until they are ready to be brought together, so that the blood *may flow immediately from one to the other.* The surgeon is thus enabled to work on the *blood-vessels* while the blood is circulating in them, that is while the lumen is naturally open because it is full of circulating blood; *therefore the blood-vessels* not being contracted and retracted are *easily* grasped and secured by the instrument. Then *the intima can without any difficulty* be so inverted that the intima of the two blood-vessels can easily be brought in direct contact. Besides the one to be described, no other special *instrument,* hooks, serrefines or needles are necessary. The *instrument is composed of two small metal* cylinders which are put and held *together by means of a small* bar and a screw. Each cylinder is opened on its longitudinal axis by a simple pivot, and at one end, a *little below the edge, is* encircled by a crown of small hooks, the points of *which are* turned toward the other end. The blood-vessel is *cuffed over* the hooks of the cylinder; the vessels are opened and the anastomosis is made. Two cases are reported in which the method was used successfully.

14. **Infantile Paralysis.**—The interesting points in Harris' case are the length and the severity of the acute manifestations; the presence in the urine of the *colon* bacillus; the effect of hexamethylenamin; the symptoms *indicative* of meningitis and tetany; the relief of the symptoms *following* lumbar puncture; the appearance of the paralysis on the tenth day and its disappearance a week later. It is Harris' belief that the symptom-complex tetany is a term *not infrequently* applied to atypical cases of anterior poliomyelitis. Also, that the question of whether colon bacillus *infection* may not cause symptoms characteristic of so-called *tetany,* poliomyelitis or meningitis is worthy of future study.

Boston Medical and Surgical Journal

March 30

18 The Nurse and the Public Health. A. W. Goodrich, New York.
19 Fibrous Stricture of the Rectum. J. P. Tuttle, New York.
20 *Hemorrhagic Disease of the *New-Born* Infant. R. M. Green and J. B. Swift, Boston.
21 Medical Inspection of Schools in Boston. S. H. Ayer, Boston.
22 A Simple, Quickly Removable Head Bandage. E. C. Hill, U. S. Army.

20. **Hemorrhagic Disease *of* New-Born *Infants.***—This paper is based on a study of fifty-one cases occurring in hospital practice during a period of not quite six years. *The* percentage incidence was 1.14. It was *noted that the* parity and civil status of the mother, the *fetal* presentation, the duration of labor and of complications *of labor and the* puerperium are factors

of no significance as predisposing or determining causes of hemorrhagic disease in the new-born. The seasonal incidence and the occurrence of hospital cases in groups tended strongly to confirm the theory of the infectious etiology of the disease. The earlier the onset of the disease, the worse was its prognosis; after one week, the prognosis became relatively, and after ten days, absolutely, good. Clinically the disease occurred in three fairly distinct types, the umbilical, the seromucus and the purpuric, which have an approximate respective mortality of 60 per cent., 50 per cent. and 22 per cent. The gross total mortality was about 50 per cent. The treatment was directed toward local hemostasis and increase of coagulability of the blood. Gelatin and rabbit serum gave the best results. Of thirteen patients receiving the gelatin treatment, nine recovered and four died. Of twenty-two patients treated with rabbit serum, twelve recovered and ten died. General supportive treatment: two recovered, four died; local hemostasis: two recovered, four died; no treatment; one recovered, two died.

Buffalo Medical Journal

March

23 Heart Nutrition. E. H. Long, Buffalo.
24 Serums and Vaccines. C. Hasse, Elmira, N. Y.

Maryland Medical Journal, Baltimore

March

25 An Extensive Ulcer of the Bladder Complicating Early Pregnancy. J. M. Hundley, Baltimore.
26 Importance of Direct Endoscopy in General Medical Practice. J. R. Winslow, Baltimore.
27 Medical and Surgical Aspects of Tumors, Including Inflammatory and Neoplastic Formations. J. C. Bloodgood, Baltimore.

Southern California Practitioner, Los Angeles

March

28 *Effects of Cholecystitis on the Heart. R. H. Babcock, Chicago.
29 *Acute Diffuse Edema of the Lungs (Cardiac). C. E. Yount, Prescott, Ariz.
30 Phthisiophobia. I. W. Brewer, Manila, P. I.
31 A Psychologic Study. H. Forline, Redlands, Cal.
32 Cardiospasm. C. Moore, Los Angeles.

28. **Chronic Cholecystitis.**—Whenever Babcock sees a case of cardiac insufficiency, from whatever cause, he always pays close attention to the liver. Whenever he finds the right lobe showing enlargement he pays particular attention to its outline. He says that in most of these cases when there is tenderness, there is tension of the right rectus and if one palpates with firmness the tension becomes more marked. In nearly all these cases, by supporting the right hypochondrium with the left hand and producing just a slight pressure with the right hand, allowing the patient to take a breath of moderate depth, one can nearly always feel the border of the liver rise over the side of the hand. Then palpating at the outer border of the rectus, and at the side of the rectus one can feel the convex border of the liver. The left lobe is not so plainly palpable as the right. In some cases quick *ballottement* of Riedel's lobe will give the under hand the sensation of a soft body coming against it. With these symptoms and with tenderness Babcock feels certain of his diagnosis. A corroborative sign is Ewald's area of cutaneous hyperesthesia. If one runs a finger or key lightly down the patient's right back and there is left a sticking or pricking sensation opposite the ninth or tenth dorsal spine, the sign is present. It may extend out 2 or 3 inches. Many patients have this cutaneous hyperesthesia and that is a very strongly corroborative sign of chronic cholecystitis. Babcock emphasizes the fact that gall-bladder disease is more frequent than is generally recognized, and that its effects on the heart or circulatory system may be much more pronounced than is suspected, and hence may be a cause of myocardial breakdown.

29. **Acute Diffuse Edema of the Lungs.**—The three cases cited by Yount occurred in women in a fair state of health, suddenly and at night. They were 48, 50 and 67 years of age respectively. All three patients believed themselves dying; two were rescued from "drowning" in their own secretions. Yount believes that one case might be considered as of cardiotoxic origin, but the other two he considers to be of the cardioneurotic type. Frequent, previous examinations of the urine in these cases, failed to show evidence of nephritis in any case. There was loss of radial pulse in all three women for a time, i. e., greatly lessened blood-pressure. Two of the patients died.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

March 15

33 A Demonstration of the Serodiagnosis of Syphilis. R. H. Mullin, Minneapolis.
34 Progressive Therapeutic Standards. C. A. Donaldson, Minneapolis.
35 *Sexual Excitability in Men of Advanced Years. F. R. Wright, Minneapolis.
36 Vesical Calculi. C. J. Holman, Mankato.

35. This article was also published in the *American Journal of Dermatology*, November, 1910.

Journal of the Indiana State Medical Association, Fort Wayne

March

37 Ocular Headache and Its Relief. F. C. Heath, Indianapolis.
38 The Laboratory Versus Clinical Methods in Practice of Medicine. D. M. Green, Muncie.
39 Autointoxication from the Alimentary Canal. P. B. Carter, Macy.
40 Suggestions in Cardiac Therapy. A. C. Kimberlin, Indianapolis.
41 Present Trend of Operative Obstetrics. G. B. Jackson, Indianapolis.

Southern Medical Journal, Nashville, Tenn.

March

42 Southern Surgeons and Surgery—Before, During and After the Civil War. W. O. Roberts, Louisville, Ky.
43 Factors that Influence the Prognosis in Operations for Cancer. G. W. Crile, Cleveland, Ohio.
44 *A Case of Aneurysm, with a New Method of Ligature of the Left Subclavian Artery. J. G. Sherrill, Louisville, Ky.
45 *Complete Absence of the Vagina; an Operation for the Formation of a Plastic Vagina. A. H. Ferguson, Chicago.
46 *Acute Multiple Urogenous Abscess of the Kidney Resembling Acute Unilateral Hematogenous Nephritis. G. T. Vaughan, Washington, D. C.
47 Suppurating Echinococcus Cyst of the Liver; Enucleation of Sac; Recovery. J. C. Oliver, Cincinnati.
48 Diagnosis of Extrauterine Pregnancy—When and When Not to Operate. E. G. Zinke, Cincinnati.
49 Omentopexy. M. H. Richardson, Boston.

44. **A Case of Aneurysm.**—The patient whose case is cited by Sherrill had a pulsating tumor about the size of a small melon situated at the upper part of the thorax, extending from near the median line and just above the level of the clavicle downward and outward almost to the margin of the pectoralis major muscle. This tumor pulsated synchronously with the heart and was distinctly expansile in character. No distinct bruit could be heard over the tumor, but an accentuated second sound of the heart was easily detected. The patient had an almost imperceptible pulse in the left radial and it was delayed somewhat compared to that of the right radial. The pulse of the left carotid was synchronous with that of the right radial; no tracheal tug; no marked dyspnea; no cough and no interference with deglutition or respiration. A diagnosis of subclavian aneurysm was made, and the various methods of treatment were discussed. It was finally decided to ligate the subclavian in the first portion of its course by attacking it from the posterior surface of the thorax. An incision was made along the posterior margin of the scapula about 4 inches long, dividing the skin and the muscles attached to the posterior portion of this bone. It was joined by an incision running from its inferior extremity to the spinous process. A similar incision was carried from its upper end in toward the spine. The soft tissues were dissected from the ribs with the skin and all hemorrhage controlled. The second, third and fourth ribs were removed for a distance of about 3 inches. The intercostal muscles were lifted off the pleura; the latter was gently pushed downward and outward with the finger and the subclavian artery readily came into view as it left the aorta at the level of the fourth dorsal vertebra. A small opening was made in its sheath and the needle was readily carried around it and a No. 3 catgut ligature placed in position. At this point of the operation, it was discovered by the assistants that the pulsation in the aneurysm did not cease. Further search revealed below the origin of the subclavian a rounded mass, seemingly not larger than a small orange, which was pulsating. The ligature on the subclavian being useless was removed. This having been accomplished the wound was closed and the patient left the table in good condition, and within an hour he was conversing freely

with the attendants in the ward. He died ten days later on rising up suddenly in bed to eat his meal. The necropsy demonstrated an aneurysm of the arch of the aorta in its lower portion, which had ruptured into the esophagus. While he failed to accomplish the object desired in this case, the cure of the subclavian aneurysm, Sherrill feels that the procedure employed is feasible and an easy method of access to the first portion of the left subclavian.

45. Abstracted in THE JOURNAL, Jan. 14, 1911, p. 140.

46. **Abscess of the Kidney.**—The symptoms of the condition noted by Vaughan are the same as those seen in acute hematogenous nephritis, and the treatment is the same.

Journal of the Kansas Medical Society, Kansas City

March

50 Gall-Stones and Their Diagnosis. C. J. McGee, Leavenworth.
51 Placenta Prævia. F. A. Carmichael, Goodland.
52 Salvarsan. N. C. Morrow, Altamont.
53 Suppurative Otitis Media. C. L. Zugg, Kansas City.
54 Expert Testimony. F. M. Brady.

Archives of Pediatrics, New York

March

55* Value of Lumbar Puncture and of the Leukocyte Count in the Diagnosis of Acute Poliomyelo-Encephalitis. J. L. Morse, Boston.
56 A Clinical Study of Eighty-Six Cases of Empyema in Children. F. Huber, New York.
57 *A Case of Mediastinal Cyst Producing Compression of the Trachea, Ending Fatally, in an Infant of Nine Months. A. D. Blackader and D. J. Evans, Montreal.
58 *A Collected Study of Sixty Cases of Meningitis and Conditions Simulating Meningitis. A. Sophian, New York.
59 Disturbed Function of the Thyroid. S. V. Haas, New York.
60 *Typhoid Infection Involving Only the Gall-Bladder. W. G. Elmer, Philadelphia.

55. **Value of Lumbar Puncture.**—Morse believes that it seems safe to conclude from the present data that during the acute stage of acute poliomyeloencephalitis the cerebrospinal fluid is clear and not infrequently under somewhat increased pressure; that it often shows a fibrin clot, which may persist for two or three weeks and perhaps longer; that it always contains an excess of cells; that these cells are chiefly of the mononuclear type, most of them being lymphocytes; and that these changes are present before the appearance of the paralysis. These changes are, however, identical with those found in tuberculous meningitis, the disease with which it is most likely to be confounded. It is true, of course, that the cerebrospinal fluid in the tuberculous meningitis contains tubercle bacilli. They are missed in about 90 per cent. of the cases, however, if the examination is the usual routine one. If tubercle bacilli are found in the cerebrospinal fluid, the diagnosis of tuberculous meningitis is, of course, positive; if they are not found, the examination of the fluid is of no assistance in the diagnosis between tuberculous meningitis and acute poliomyeloencephalitis.

The characteristics of the cerebrospinal fluid in the early stage of acute poliomyeloencephalitis are so different from those in the early stage of cerebrospinal meningitis, in which the fluid is turbid or purulent, contains a large number of polynuclear cells and, as a rule, numerous meningococci—that in Morse's opinion there is no possibility of confusing them. Lumbar puncture is, therefore, of the greatest assistance in differentiating between these two conditions. It is of equal value in distinguishing acute poliomyeloencephalitis from influenzal and pneumococcus meningitis and from meningitis due to the pus organisms. The changes in the cerebrospinal fluid in the early stage of acute poliomyeloencephalitis are so definite that when they are found it is possible to exclude all diseases outside of the meningitides. Lumbar puncture, therefore, provides a most valuable means of diagnosis in this disease. Unfortunately, there is nothing whatever characteristic about the early symptoms of acute poliomyeloencephalitis, and in order to recognize the disease early, before the onset of the paralysis, at a time when treatment might possibly be of some value, it would be necessary to do a lumbar puncture on every sick child. This hardly seems a rational procedure. Treatment can do no good after the appearance of the paralysis, because the harm is then already done. Lumbar puncture at this time simply makes possible the verification of the clinical diagnosis. The value of lumbar puncture in the early diagnosis of acute poliomyeloencephalitis is, therefore, very limited, in spite of the marked changes in the cerebrospinal fluid in this disease. Morse regards the leukocyte count as of little or no assistance in the early diagnosis of acute poliomyeloencephalitis. There is at present not sufficient evidence to show whether or not there is a relative or absolute lymphocytosis in the early stages.

57. Abstracted in THE JOURNAL, June 11, 1910, p. 1996.

58. **A Study of Meningitis.**—In only nine of the sixty cases investigated by Sophian was a correct clinical diagnosis made by the attending physician. In only one case was a diagnosis of meningitis not made. This case was named a myelitis. From this study it is evident that of the true inflammations of the meninges, tuberculous meningitis is the form most frequently encountered (sixteen cases), and most often confused with the other forms, especially with epidemic cerebrospinal meningitis. Of the conditions simulating meningitis, Sophian found bronchopneumonia in children, especially those forms with apical lesions, most often mistaken for meningitis. Other conditions were gastro-enteritis, other acute infections, such as typhoid, and other conditions of the central nervous system, such as cerebrospinal lues, and anterior poliomyelitis. Sophian believes that in the majority of cases tuberculous meningitis can be diagnosed clinically; the clinical picture is, as a rule, very definite and distinct. Epidemic cerebrospinal meningitis has also, as a rule, a definite and distinct symptom-complex. Still, the two conditions, while frequently easily differentiated, may sometimes so closely resemble each other clinically, especially in the late stages of cerebrospinal meningitis or the early stages of tuberculous meningitis, that it may be impossible to make a clinical differential diagnosis. The other acute forms of meningitis, those caused by *Streptococcus pyogenes*, *Streptococcus mucosus capsulatus*, the pneumococcus, and *B. influenzæ*, present almost the same symptom-complex as epidemic meningitis. The history of previous disease, such as otitis media, may be of some help, but the diagnosis can only be established definitely by lumbar puncture and examination of the cerebrospinal fluid. Meningism complicating other acute infections, while sometimes difficult to differentiate from epidemic meningitis, can, as a rule, be diagnosed. Polioencephalitis often resembles tuberculous meningitis clinically; however, here the local palsies, such as hemiplegia are extensive and permanent.

Blood count is of aid in diagnosis. The principal features are, in the cerebrospinal form, the high leukocytoses of 20,000 or more, with the high relative polynucleosis up to 99 per cent. In the tuberculous meningitis is seen a moderate leukocytosis, up to 18,000 or occasionally more, with a moderate relative polynucleosis up to 80 per cent. or more. Poliomyelitis and polioencephalitis in the febrile stage show a slight leukocytosis; meningism secondary to another disease of course gives a blood-count depending on the disease causing it. Sophian urges that once a clinical diagnosis of meningitis is made, whatever the form, a lumbar puncture should always be performed. A clinical diagnosis is never certain and even with a complete picture of a type of meningitis errors may be made. A study of the cerebrospinal fluid will, in the case of acute suppurative meningitis, enable one at the first examination, as a rule, to find the infecting organism. The very unusual exceptions are rarely in the very onset of epidemic cerebrospinal meningitis, before the organism is free in the cerebrospinal fluid, or, as already mentioned, a localized meningitis, as the localized pneumococcus meningitis mentioned in Holt's cases. It is important, especially in meningococcus infection, when a positive culture is desired, to subinoculate the sediment on suitable culture media as soon as possible after withdrawal from the canal. In tuberculous meningitis in a very large percentage of cases the bacilli can be found in the cerebrospinal fluid at some time during the course of the disease, usually the first examination being sufficient to demonstrate the organism. When one can put the cerebrospinal fluid aside immediately to obtain the unbroken fibrin network, as was done in Hemenway's cases, the chances of finding the bacilli are much larger. Animal inoculation in positive cases, where bacilli have not been found, produces tuberculosis in four to six weeks.

Cytologic examination is extremely important. The increase in the number of cells in inflammatory meningitis is constant; in the suppurative forms of meningitis the preponderance of polynuclear leukocytes is striking; in the late stages of cerebrospinal meningitis, however, as in chronic basic meningitis, a relative lymphocytosis is present; in tuberculous meningitis the excess of lymphocytes up to 100 per cent. is marked; occasionally, however, one will see a tuberculous fluid, in which bacilli have been found, which is cloudy and shows an excess of polynuclear leukocytes, up to 90 per cent. The gross fibrin content of the fluid after standing is a fairly constant guide, there being an increase in meningitis, and very little fibrin in normal fluid. The reduction test of Fehling's solution has been found of no value by Sophian. Noguchi's globulin test, in a small number of fluids examined, was substantiated in inflammatory condition, a positive reaction being present, indicating an increase of the globulin content in the cerebrospinal fluid.

60. **Typhoid Infection.**—The case reported by Elmer was that of a young girl who was infected with typhoid, but who resisted the infection, except for one organ, namely, the gall-bladder, and her illness in his opinion was due solely to the cholecystitis. That she was infected with the poison of typhoid, he says, there can be no doubt, because eleven other patients who had been drinking milk from the same dealer developed typhoid in its characteristic form. About eighteen days after she had ceased to drink the milk, she developed a little fever. She had no nose-bleed, no vomiting, no pain in back or limbs, but had not felt well for some weeks. She had pain in the right side of the abdomen. The edge of the spleen, when a full inspiration was taken, could just be felt but was very indefinite. The gall-bladder could easily be palpated; it was distended and very tender. The temperature ran an irregular course, with marked daily remissions, reaching 103 F. or a little more in the late afternoons. Pulse varied from 80 to 100. Leukocyte count was 7,000. The patient did not seem ill, was usually hungry, was in good spirits most of the time, and had none of the apathy which usually results from the toxemia of typhoid. The urine was normal. On the seventh day, Elmer found three typical rose spots on the abdomen, the first that had appeared; and on the following day he obtained a characteristic clump reaction with a dilution of 1 to 50. The complete relief from all symptoms when the gall-bladder began draining, and the absolutely normal temperature which began about thirty-six hours later and continued without variation all through the convalescence, and the fact that the patient seemed and felt perfectly well from the time the gall-bladder was relieved, led Elmer to the conclusion that there could be no sloughing intestinal ulcers or extensive lymphatic involvement.

University of Pennsylvania Medical Bulletin, Philadelphia

February

61 Cerebral Decompression. C. H. Frazier, Philadelphia.
62 Malaria. W. Pepper, Philadelphia.
63 *Experimental Production of Leprosy in the Monkey (Macacus Rhesus). C. W. Duval, Philadelphia.

63. This article was also published in the *Journal of Experimental Medicine*, March, 1911.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

March

64 A Neuro-Epithelioma Developing from a Central Gliosis, After an Operation on the Spinal Cord. M. G. Schlapp, New York.
65 Facial Hemiatrophy in a Boy Ten Years Old. G. A. Moleen, Denver, Colo.
66 Colloid Bodies in the Central Nervous System: Their Presence After Severe Traumatism in a Case of Dementia Paretica. N. S. Yawger, Philadelphia.

Journal of Experimental Medicine, Lancaster, Pa.

March

67 Chemical Studies of the Brain in Cases of Dementia Præcox. W. Koch, New York.
68 The Blood-Supply of the Kidney. The Influence of the Vagus on the Vascularity of the Left Organ. R. Burton-Opitz and D. R. Lucas, New York.
69 Calcium Metabolism in a Case of Infantile Tetany. H. D. Haskins and H. J. Gerstenberger, Cleveland.
70 *The Succus Entericus. H. O. Mosenthal, New York.
71 *Absorption from Intramuscular Tissue. J. Auer and S. J. Meltzer, New York.
72 *Relations of the Interstitial Cells of Leydig to the Production of an Internal Secretion by the Mammalian Testicle. F. M. Hanes, New York.
73 A Histologic and Chemical Study of the Fatty Matter of Normal and Cryptorchid Testicles. F. M. Hanes and J. Rosenbloom, New York.
74 *Cultivation of the Leprosy Bacillus from the Human Tissues, with Special Reference to the Amino-Acids as Culture Media. C. W. Duval, New Orleans.
75 *Experimental Production of Leprosy in the Monkey (Macacus Rhesus). C. W. Duval, New Orleans.
76 Chemo-Immunologic Studies on Localized Infections. R. V. Lamar, New York.
77 Cultivation of Tissues in Vitro and Its Technic. A. Carrel and M. T. Burrows, New York.

70. **The Succus Entericus.**—In experiments on dogs, Mosenthal noted that a nitrogen equivalent to about 35 per cent. of the nitrogen intake, though not necessarily derived directly from it, is daily secreted in the succus entericus in dogs on a mixed diet; about 10 per cent. is excreted in the feces, and about 25 per cent. is reabsorbed. The amount of reabsorbed nitrogen-containing material is considerably larger, if the bile and pancreatic secretion are included. Mosenthal says that the metabolic significance of this reabsorption can only be surmised. That it is probably of great importance is indicated by the fact that in the experiments recorded by him, the amount of nitrogen reabsorbed equaled approximately 25 per cent. of the nitrogen intake.

71. **Absorption from Intramuscular Tissue.**—Because the correctness of their previous work on absorption from intramuscular tissue was questioned, Auer and Meltzer repeated their experiments, proving again that the absorption after intramuscular injections is far superior to that after injections into subcutaneous tissue, approaching in its effectiveness that of an intravenous injection. The experiments were made on rabbits, and the results obtained were constant.

72. **The Interstitial Cells of Leydig.**—It is claimed by Hanes that the mammalian testicle elaborates an internal secretion necessary to the normal development of secondary sexual characters. The spermatogenic cells play no part in the formation of this secretion. One function of the Sertoli cells is to supply fat to the developing sperm cells. In the absence of the sperm cells from the mammalian testicle, fat accumulates in large amount in the Sertoli cells. The Sertoli cells seem to take no part in the production of an internal secretion. The interstitial cells of Leydig are, in all probability, responsible for the production of an internal secretion of the mammalian testicle.

74. A paper on the same subject is published in the *Archives of Internal Medicine*, February, 1911, and is abstracted in The Journal, March 25, 1911, p. 925.

75. This paper is also published in the *University of Pennsylvania Medical Bulletin*, February, 1911.

Texas State Journal of Medicine, Fort Worth

March

78 Puerperal Sepsis and Hints on Its Management. J. B. McMillan, Paris.
79 An Overlooked Source of Puerperal Infection. E. F. Wright, Royse.
80 The Care of the Puerpera. C. R. Hannah, Dallas.
81 The Care of Pregnant Women During Pregnancy and at Confinement. C. A. Schultz, Alvarado.
82 Obstetric Work in Country Practice. W. B. Huey, Elcampo.
83 Chloroform During the Second Stage of Labor. J. M. Meason, Bono.
84 Delayed Union and Ununited Fractures. W. A. Duringer, Fort Worth.

Virginia Medical Semi-Monthly, Richmond

March 24

85 Value of Lavage in Therapeutics, and Its Frequent Neglect. G. P. Hamner, Lynchburg.
86 Poisonous Serpents and Treatment of Their Bites. W. F. Driver, New Market.
87 Corneal Ulceration and Its Treatment. H. H. McGuire, Winchester.
88 Relation of Alcoholism and Drug Addictions to Preventive Medicine. T. D. Crothers, Hartford, Conn.
89 *Opium Poisoning—An Unusual Antidote. P. M. Strother, Scottsville.

89. **Opium Poisoning.**—The patient in this case took a 2-ounce mixture of tincture of opium and tincture of arnica, equal parts. At 4 p. m., four and a half hours later, her husband found her in a deep sleep, and seeing the empty bottle, immediately aroused her and administered warm mustard water until vomiting was induced. Strother reached her at 4:30 p. m. He found her awake and rational, though very

drowsy. Pulse was 136 and small; respiration was 26; the pupils were pin-head in size. She complained only of nausea and vomiting. Strychnin, 1/30 grain, and atropin, 1/150 grain, were given hypodermically, and a cup of hot black coffee by mouth, the latter being soon vomited, but the dose was repeated. During the ensuing three hours, the pulse-rate gradually fell to 120, with better volume, and respiration to 20, when Strother repeated the strychnin, 1/30 grain, omitting the atropin. After another three hours the pulse was 96 and of fair volume, and respiration was 17. At the end of six hours more, the pulse was 68, and respiration was normal. Strother asks: Was the tannin content of the arnica sufficient to antidote the morphin in the laudanum chemically, or did the depressant effect of the arnica on the vagi antidote the opium physiologically?

Alabama Medical Journal, Birmingham

February

90 Indications for the Removal of Adenoids and Tonsils. J. R. Snyder, Birmingham.
91 Electric Treatment of Poliomyelitis. T. A. Williams, Washington, D. C.
92 Among Ourselves. H. Johnston, Birmingham.
93 Lumbar Puncture as a Diagnostic and Therapeutic Measure. A. A. Walker, Birmingham.
94 Importance of Biology to Rational Medicine. E. P. Riggs, Birmingham.

Therapeutic Gazette, Detroit

March

95 *The Scientific Evidence of the Possibility of Intestinal Antisepsis. H. C. Wood, Philadelphia.
96 Symptomatic Relief in Aortic Aneurysm by Wiring and Galvanism (Moore-Conradi Method). E. J. G. Beardsley, Philadelphia.
97 *Action of Gossypii Cortex on Uterine Contractions. J. C. Scott, Philadelphia.
98 Magueys and Maguey Sap or Aguamiel, a Therapeutic Agent of High Value. C. S. Dolley, Mexico City, Mexico.

95. Abstracted in The Journal, Dec. 17, 1910, p. 2172.

97. **Action of Gossypii Cortex.**—The effect of this agent on the uterine contractions was studied by Scott. He found that the drug acts as well on the excised uterus as on the uterus with blood and nerve supply intact. In view of the extremely uncertain properties and keeping qualities of ergot and its preparations, and the fact that gossypii cortex is stable and very active, as shown on the cat's uterus, Scott thinks this drug is deserving of a more extended clinical use in the class of cases in which ergot is indicated.

Northwest Medicine, Seattle

March

99 Value and Handicap of the Medical Profession. J. T. Ronald, Seattle.
100 Treatment of Joint Infections by Aspiration and Injection of 2 Per Cent. Formalin in Glycerin. C. L. Poley, Portland, Ore.
101 Diagnostic Significance of Mucus in the Test Meal. H. P. Marshall, Spokane, Wash.
102 Helpful Points in Anesthesia. C. G. Parsons, Denver, Colo.
103 Malaria in Utah. C. M. Clark, Provo, Utah.
104 Imbalance of Ocular Muscles. A. H. Sawins, Spokane, Wash.
105 Tuberculous Meningitis. J. H. Bristow, Portland, Ore.
106 Insect Bites. R. A. Pearse, Brigham City, Utah.

Pennsylvania Medical Journal, Athens

March

107 *Arterial Hypertension and Its Relation to Morbid Changes in the Eye. L. C. Peter, Philadelphia.
108 A Case of Varix or Angioma Venosum of the Orbit. J. F. Klinedinst, York.
109 *The Pelvic Fascia with Relation to the Operation for Cystocele. R. E. Brenneman, Pittsburg.
110 *Cecostomy Versus Appendicostomy for Colon Lavage. W. M. Beach, Pittsburg.
111 *An Operation for Ankylosis of the Hip in Which Baer's Membrane Was Used. G. G. Davis, Philadelphia.
112 *Treatment of Acne Vulgaris. J. G. Burke, Pittsburg.
113 Progress in Empirical Therapeutics. J. W. Boyce, Pittsburg.
114 The Law Governing Suits for Malpractice in Pennsylvania. S. Scoville, Philadelphia.

107. **Arterial Hypertension.**—The systolic blood-pressure was carefully taken by Peter in 104 cases, mostly chronic interstitial nephritis, in which there was a neuroretinitis or a retinitis. For purposes of comparison nine cases of syphilitic neuroretinitis are included in the report, showing an average blood-pressure of 132 mm. of mercury and three cases of chronic parenchymatous nephritis with an average pressure of 132 mm. The average pressure in twenty cases of retinitis was 165 mm.; in fifty-nine cases of neuroretinitis it was 185 mm.; in three cases of albuminuric retinitis, 190 mm.; in six cases of hemorrhagic retinitis, 205 mm., and in three cases of papillitis, 225 mm. Thirty-three of the ninety-four kidney cases occurred in men and sixty-one in women. The higher pressures were observed relatively much more frequently in men than in women. Peter concludes that arterial hypertension is the chief cause of the eye-ground phenomena observed in chronic interstitial nephritis and arteriosclerosis. Similar vascular changes, associated with high blood-pressure, may, he says, be observed at times, before these diseases are diagnosed by other clinical symptoms. It frequently acts as a cause for subconjunctival hemorrhage and is so closely associated with glaucoma that it should be regarded as an active factor in the development of the disease. The author urges that in order to prevent and to treat rationally the more serious eye conditions, routine blood-pressure studies should be made in all cases of intra-ocular disease not traumatic in origin.

109 and 110. Abstracted in The Journal, Nov. 19, 1910, p. 1838.

111. Abstracted in The Journal, Nov. 12, 1910, p. 1757.

112. Abstracted in The Journal, Nov. 5, 1910, p. 1672.

Journal of Infectious Diseases, Chicago

March

115 Transmission of Trypanosoma Lewisi by Rat Fleas (Ceratophyleus Sp. and Pulex Sp.), with Short Descriptions of Three New Herpetomonads. L. D. Swingle, Lincoln, Neb.
116 *Influence of Ether and Ether Anesthesia on Bacteriolysis, Agglutination and Phagocystosis. E. A. Graham, Chicago.
117 Influence of Fresh and Autolyzed Organ Extracts on Experimental Tuberculosis. W. C. White and E. Zeublin, Pittsburg, Pa.
118 Immunologic Reactions of Oidiomycosis (Blastomycosis) in the Guinea-Pig. B. F. Davis, Chicago.
119 Classification of the *B. Coli* Group. D. D. Jackson.
120 Method for Determining the Germicidal Value and Penetrating Power of Liquid Disinfectants. A. I. Kendall and M. R. Edwards, Boston.

116. An abstract of this work was published in The Journal, March 26, 1910, p. 1043.

Long Island Medical Journal, Brooklyn, N. Y.

March

121 Value of Surgical Diagnosis in Upper Abdominal Diseases. J. B. Deaver, Philadelphia.
122 *Anomalies of the Colon as Demonstrated by the Roentgen Ray. C. Eastmond, Brooklyn.
123 Surgical Indications in Lesions of the Large Intestine. R. S. Fowler, Brooklyn.
124 Provisions for the Health of the Seamen in the Present-Day Warship. W. J. Baxter, U. S. Navy.
125 The Navy and the Important Relations to the Naval Establishment Borne by the Medical Corps. C. F. Stokes, U. S. Navy.
126 The Medical Profession. J. C. MacEvitt, Brooklyn.

122. **Anomalies of the Colon.**—It is believed by Eastmond that abnormal conditions of the colon are frequently the cause, not only of persistent constipation, but also of the vague, indefinite abdominal symptoms and the nervous conditions so often seen and so hard to attribute to any definite diseased entity. The anomalous conditions of the colon are summarized by him as follows: (1) general prolapse of the transverse colon producing the "U" or "V" type; (2) prolapse of the hepatic or splenic flexure with or without angulation; (3) angulation of any part, especially of the sigmoid; (4) prolapse of one-half of the entire colon; (5) general prolapse of the entire colon into the pelvis; (6) spasm of one part or of the entire colon; (7) anomalous development of any part, such as a loop formation from the presence of an unduly long mesentery; (8) adhesions, either alone or associated with any of the above conditions. In all these conditions, there is some factor which is sufficient to produce partial obstruction and damming back of fecal stream. In the cases of adhesions and angulations, there is almost uniformly found a dilatation behind the obstruction. This, with the ensuing stasis, affords ample opportunity for undue absorption of intestinal material, auto-intoxication, with its headache, drowsiness, listlessness, etc. With prolapse, the displaced portion of the viscus, by dragging on its natural supports, is productive of backache, and with the interference in circulation and ennervation, there follows congestion, inflammation, spasm, local pain and tenderness, and that train of nervous phenomena which is termed neurasthenia. The value of

Roentgen-ray examination in these cases lies, first, in the detection of the true state of affairs, and second, in the determination thereby whether it is a purely medical one that may be relieved and possibly cured by general and local treatment, or whether operative procedures will be necessary to secure the desired results.

Medical Herald, St. Joseph

March

127 *Hints on the Etiology of Disease.* L. A. Merriam, Omaha, Neb.
128 Uterine Fibroids Complicating Pregnancy, Labor and the Puerperium. M. Strong, Omaha, Neb.
129 *Medical Treatment of Inoperable Cancer of the Parturient Tract.* R. Williams, St. Joseph, Mo.
130 The Crime of Love. G. H. Bogart, Brookville, Ind.
131 Treatment of Cerebral Affections. W. C. Abbott, Chicago.
132 Two Case Reports with Stomach Manifestations. H. C. Crowell, Kansas City, Mo.
133 Dystrophies, Syphilitic in Origin. H. Lee, St. Joseph, Mo.
134 Prognosis in Chronic Valvular Disease of the Heart. C. A. Good, St. Joseph, Mo.

American Journal of Surgery, New York

March

135 Indications for Gastro-Enterostomy. J. B. Bissell, New York.
136 Cystoscopy and Urethral Catheterization in Young Children. E. Beer, New York.
137 Injuries to the Kidneys, with End-Results. P. M. Pilcher, Brooklyn, N. Y.
138 A Case of Cylindroma: Removal of Orbital Tumors. J. H. Claiborne and E. L. Oatman, New York.
139 *Surgery of Moles, Warts, Nevi and Cysts of the Skin.* D. W. Harrington, Milwaukee, Wis.
140 Traumatic Epilepsy and Traumatic Insanity. G. M. Hammond, New York.
141 Traumatic and Accidental Hernias, as They Affect Employee and Employer. R. W. Corwin, Pueblo, Colo.
142 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
143 An Improved Method of Intermittent Wound Irrigation. A. J. Bendick, New York.
144 A Means of Tying Knots When One End of the Suture Is Very Short. A. L. Soresi, New York.

American Journal of the Medical Sciences, Philadelphia

April

145 *The Therapeutics of Digitalis and Its Allies. A. R. Cushny, London.
146 Personal Experiences with Salvarsan in Syphilis. H. Goldenberg and D. J. Kaliski, New York.
147 *Physiology of the Pituitary Gland and the Actions of Its Extracts. C. J. Wiggers, Ann Arbor, Mich.
148 *Stiff and Painful Shoulders, with Loss of Power in the Upper Extremity. T. T. Thomas, Philadelphia.
149 Interrelation of the Organs of Internal Secretion. R. G. Hoskins, Columbus, Ohio.
150 *Sudden Onset of Pott's Disease Without Deformity of the Vertebræ. *W. B. Cadwalader, Philadelphia.*
151 Pathologic Findings in the Parathyroids in a Case of Infantile Tetany. B. [illegible] New York.
152 **Sarcoma of the* [illegible] *Philadelphia.*
153 *Prognosis of [illegible] Lesions Involving the Whole of or [illegible]. Walsh, Philadelphia.

145. **Digitalis and Its Allies.**—There is no question in Cushny's mind that digitalis and its allies are too much feared by the medical profession. The "cumulative" action, he says, has been held over us as a bogey for so many years that many prescriptions contain this valuable drug in harmless and useless doses. As regards their relative usefulness, he says that there is little difference between digitalis, squills or strophanthus. We get the same beneficial results and the same undesirable ones as regards the heart, and a patient who shows symptoms of heart block under digitalis suffers from the same irregularity under squills or strophanthus, while when extra-systole is induced by one it follows from all. Strophanthus is often said to have less tendency to raise the blood-pressure than digitalis, but in patients neither induces any rise of pressure, and in some individuals, both cause an equal fall. There is, on the whole, rather less tendency to headaches, nausea and vomiting under strophanthus and squills than under digitalis, but the difference is not very marked and headache is caused in some cases by all three. Slight diarrhea has followed the use of squills more than the others, and strophanthus also tends to cause this more than digitalis. This tendency to diarrhea is still more marked from the use of helleborin and apocynum.

In animal experiments, one of the characteristic effects of digitalis medication is the rise of blood-pressure, which arises in part from the heart action, and in part from a constriction of the arterioles. In patients the blood-pressure is rarely augmented by digitalis and may in fact fall as the general improvement sets in. This, Cushny thinks, is due to the much greater efficiency of the vasomotor mechanism in man, which has been developed to permit of his assuming the erect attitude. As the heart fails in disease, the organ which first suffers is the brain; but anemia of the brain is promptly remedied by constriction of the abdominal vessels, by which the blood is again directed to the head areas. If digitalis is then given and the heart action improves, the first effect would be to increase the blood-supply of the brain, and this leads the sentinel in the medulla to relax its vigilance, the mesenteric vessels are allowed to relax and the improvement in the heart may thus be coincident with lowered blood-pressure. In his experience there is no significant increase in the amount of urine, except when dropsy is present.

147. **Physiology of the Pituitary Gland.**—The chief idea brought out by Wiggers is that the anterior lobe of the pituitary gland evidently elaborates a secretion that is necessary to life and to normal metabolism and development. This substance has so far resisted extraction by various solvents, hence its chemical nature and physiologic properties remain unknown. The posterior lobe, which is not of vital importance, contains or secretes a substance that may be extracted by water, glycerin or salt solution, and resists boiling, but it has not been demonstrated that it is identical with the secretion of the anterior lobe or that it represents its vital principle. The extracts constrict the peripheral vessels (probably by a direct muscular action), thus producing a marked rise of arterial blood-pressure. This constriction is not equally pronounced in all organs, for the renal vessels are, at least passively, dilated during its action. These extracts are generally stated to slow and strengthen the heart, but myographic tracings of the intact and perfused heart made by Wiggers, indicate a depressing influence to be the most constant and characteristic one, an increase in the amplitude being only exceptionally the case. The slowing, as well as depression, are, he thinks, largely attributed to a direct cardiac action, but the former may be augmented by a vagus effect. Pituitary extract resembles adrenalin in its action only in that it causes a rise in blood-pressure. The manner in which they affect the heart and blood-vessels, as well as the effects induced, are entirely different. In addition to its cardiovascular action, pituitary augments the secretion of urine and inhibits the flow of pancreatic juice, but it has not been definitely determined whether these varied reactions are due to separate substances, to a specific affinity of a single substance for different cells, or whether they are secondary to changes in the circulation.

148. **Stiff and Painful Shoulders.**—A periarthritis from tears of the axillary portion of the shoulder capsule, due to forced abduction, in Thomas' opinion offers the best explanation of the stiff and painful shoulders, with loss of power in the arm, variously diagnosticated as fibrous ankylosis, neuritis, paralysis of the deltoid, traumatic arthritis, etc. The most characteristic feature is a scapulohumeral limitation of movement, sometimes slight, often marked, but never complete. The associated loss of power and atrophy are due in part to disuse, but probably in most part to the perineuritis, neuritis and resulting adhesions and compression of some or all of the brachial nerves in the axilla, adjacent to the wounded joint. The audible and palpable tearing which accompanies the breaking up of the limited abduction and external rotation, in chronic cases, by the leverage of the arm, under an anesthetic, is produced not by the tearing of fibrous adhesions in the bursa, but of the axillary portion of the capsule shortened by cicatricial contraction in its relaxed condition. This bursa is circumscribed to the upper surface of the greater tuberosity of the humerus and the adjacent small portions of the rotators inserting into it. When the bursa is inflamed, Thomas says, the diagnosis should easily be made by the acute tenderness localized to the upper surface of the humerus, directly in front of the acromion, when the arm is in the position of rest, that is, adduction and internal rotation, which it practically always occupies. The capsule lesion is typified by that which occurs in an anterior dislocation of the shoulder, the frequency of which is nearly as great as that of the other dislocations of the shoulder combined.

Those cases of stiff and painful shoulder in which there is no history of dislocation are explained, in the first place, by the spontaneous reduction of many dislocations as the arm falls from its abducted position to the side of the body, so that they are not recognized as such; and in the second place, by the much greater frequency of milder but similar tears (sprains) from forced abduction, which are not sufficiently extensive to permit the occurrence of a dislocation. Sprains are rarely recognized in this joint, because they are peculiarly obscure as to their etiology and symptomatology. At the moment of the forced abduction the patient is excited and does not appreciate the relation between this movement and the pain it produces, the capsule being poorly supplied with nerves and the pain at the moment probably being slight. The arm immediately drops to the side into the position of most complete relaxation of the torn portion of capsule, and is kept there afterward because of the pain produced by abduction and external rotation which drag on the seat of injury. The lesion is deeply seated and localized with difficulty, and the disturbances which follow are misinterpreted. The most rational method of treatment is that which aims at increasing the length of the contracted tissues to the normal, favors the absorption of inflammatory material, and increases the power of the weakened and atrophied muscles.

150. **Paralysis in Pott's Disease.**—Four cases are reported by Cadwalader. Three terminated fatally and a careful postmortem examination was made. They presented swelling and destruction of axis cylinders, proliferation of the glia, round-cell infiltration, sclerosis of the blood-vessels, perivascular infiltration, necrotic softening of the central gray matter, and compound granular cells at the level of greatest compression of the spinal cord. In one case there was an internal hydrocephalus affecting only the lateral ventricles; the foramina, however, were not occluded, but the cells of the chorioid plexus were decidedly diseased; it is conceivable, therefore, that as a result of perverted function of diseased cells there may have been an increase of secretion sufficient to cause this distention. But it is also possible that hydrocephalus may have been the result of compression of the cord, and that if an ophthalmologic examination had been made, choked disk would have been found. At other levels of the spinal cord where compression seemed to play no part, there were definite though very moderate signs of vascular disease, consequently it might seem as if there was some other element responsible as well as compression. After searching the literature on this subject Cadwalader was able to find only two cases described in which paralysis developed instantaneously without deformity of the vertebræ.

152. **Sarcoma of the Vagina.**—McFarland presents a very comprehensive statistical study of 102 cases and reports a new case of grape-like sarcoma of the vagina in an infant.

153. **Tuberculosis of the Lungs.**—Despite the pathologic findings, Walsh believes that clinical tuberculosis, that is, tuberculosis in individuals with some susceptibility, begins more commonly at the top of the right lung. A study of the progression of tuberculosis of the lung on autopsies at the Phipps Institute showed that in the cases in which it was possible to judge the progression, the progression commonly corresponded to what Walsh has pointed out as the most fatal, clinically; in other words, the majority of cases showed progression practically throughout one side before the other was involved. Lesions involving the whole of one lobe of the left lung usually give better results than lesions of the same size in the right lung. One reason for this appears to be that the large lesion on the left more frequently represents the secondary development in a somewhat resistant case. Lesions involving an amount of lung tissue the size of the left upper lobe give a better prognosis when the opposite side shows a chronic healed lesion.

Louisville Monthly Journal of Medicine and Surgery

March

154 Headache or Migraine. Hemicrania. C. Skinner, Louisville.
155 A Case of Sarcoma of the Lung. C. Skinner, Louisville.
156 Pyloric Stezosis in an Infant. S. J. Meyers, Louisville.
157 A Case of Multiple Adenocarcinoma. W. O. Roberts, Louisville.
158 A Case of Cancer of the Cecum. W. F. Boggess, Louisville.
159 Steel Removed from the Eye with a Magnet. S. G. Dabney, Louisville.
160 Syphilis of the Stomach. J. J. Moren, Louisville.

Providence Medical Journal

March

161 Dementia Præcox. A. H. Harrington, Howard, R. I.
162 Cesarean Section. D. F. Gray, Providence.
163 A Case of Multiple Warts. W. E. Wilson, Pawtucket, R. I.
164 Ehrlich's New Remedy for Syphilis. F. T. Fulton, Providence.
165 Feeble-Mindedness. J. H. Ladd, Slocums, R. I.
166 Puerperal Insanity. H. G. Partridge, Providence.
167 The Medicolegal Examination of Blood-Stains. W. G. Dwinell, Providence.

Iowa Medical Journal, Des Moines

March

168 Chronic Low-Grade Inflammation of the Ocular Tunics and Its Influence on Errors of Refraction. H. B. Gratiot, Dubuque.
169 Operative Procedure for Brain Abscess of Otitic Origin. L. W. Dean, Iowa City.
170 Progress in Matters of Public Health. T. U. McManus, Waterloo.
171 Tuberculosis in Iowa. W. G. Carhart, Marion.
172 Diagnosis of Renal and Ureteral Calculi. D. N. Eisendrath, Chicago.
173 Review of Surgical Progress. J. C. Rockafellow, Des Moines.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

March 18

1 *Aphasia. R. Saundby.
2 *Two Cases of Hereditary Congenital Word Blindness. J. Hinshelwood.
3 An Epidemic of Infantile Paralysis in Bristol. G. Parker.
4 Etiology of Poliomyelitis. A. E. Vipond, Montreal.
5 *The Gastric Origin of Angina Pectoris. H. W. Verdon.
6 *Beneficial Effect of the Ingestion of Cane Sugar in Certain Forms of Heart Disease. A. Goulston.
7 Mechanotherapeutics in Treatment of Chronic Constipation. E. F. Cyriax.
8 Salvarsan in Syphilis. A. Evans.
9 Curative Effect of Salvarsan in Frambesia. H. Alston.
10 Occurrence of Fluid in the Abdominal Cavity in Pregnant Rabbits. C. Bolton and A. M. H. Gray.
11 Histology of Rheumatic Carditis and Other Rheumatic Phenomena. C. Coombs.
12 The Rat Flea as the Intermediate Host of a Rat Tapeworm. W. Nicoll.

1. **Aphasia.**—Saundby believes that it is difficult to escape from the amount of evidence brought forward to show that destruction of the third frontal convolution, even on both sides, does not cause aphasia; but almost equally cogent, and even more abundant, he says, is the evidence that aphasia occurs in cases in which this convolution is intact. The usual answer in this evidence is that while it may appear intact, it is not so really. Marie has lately reported three cases of this kind in which the convolution was examined microscopically by serial sections without any lesion being discovered. The only rejoinder that the supporter of Broca can make is that the lesion is functional in character, and reveals itself by no change which can be detected by present means of research. But, continues Saundby, those who make this assertion must bear the onus of proof, and it is not easy to produce evidence in its favor. If the convolution of Broca is the seat of the faculty of language, its destruction should be invariably followed by the loss or impairment of that faculty; further, when there is loss or impairment of the faculty of language, this convolution should show always some demonstrable change; if neither of these relations exist, then the only possible verdict must be that the existence of the supposed relation is not proved.

2. **Hereditary Congenital Word Blindness.**—The first case cited by Hinshelwood, that of a girl, is a typical case of abnormal difficulty in registering in the brain the visual symbols of letters and words. She has now, after seven years of teaching in the ordinary way, acquired the visual memories of the most common monosyllabic words. Hinshelwood has seen cases in which after seven years of ordinary training, the child had practically acquired nothing so far as the visual memory of words and letters is concerned. He regards the case of this girl as a mild case of congenital word blindness and, if taught in the proper way, he is certain that she will soon be able to read fairly well. The second case, that of a boy of 10, is of a much more severe type, and the difficulty has been much greater than in the case of the girl, as, after four years' sim-

ilar training, the boy has acquired scarcely any visual memories of words or letters, not even recognizing by sight all the letters of the alphabet. An important point in this case is that the child has experienced the same difficulty in dealing with figures. Hinshelwood says that pure congenital word blindness, which is a local affection of a limited cerebral area, can always be overcome by perseverance and proper methods of education, and herein lies the great importance of the recognition at an early period of the true character of such cases.

5. **Angina Pectoris.**—In one case cited by Verdon, the patient, a man of 63, when seen had been suffering from an anginal seizure for half an hour. He had been making ineffectual efforts to expel wind from his chest, and allowed the introduction of an esophageal tube, a procedure which resulted in an exhaustive liberation of gastric flatus. The effects of the operation became instantly apparent in the altered aspect of the patient. His color returned, and he seemed no longer in pain. The seizure was manifestly at an end. On two occasions he again resorted to the operation of gastric deflation, and on each he brought the seizure to a sudden and abrupt close. The patient had suffered from anginal seizures from time to time for several years; the first severe attack occurred in 1908. When a seizure has been brought to an abrupt and complete termination by the introduction of the esophageal tube, and when later seizures have shown themselves amenable to a similar operation, Verdon thinks the fact that the seizures are the result of tension of the gastric atmosphere is demonstrated beyond question.

6. **Cane Sugar in Heart Disease.**—That glycogen is essential to healthy, well-nourished muscle is shown by the fact that it furnishes a source of energy for the needs of the tissue cells, and particularly for muscle work. The glycogen of a muscle disappears in proportion to the work done by the muscle, and prolonged muscular work, especially in starvation, may wipe out quickly the entire store of glycogen in the body. All modern physiologists agree that glycogen stored up in a muscle is converted into dextrose by an amylolytic ferment before being actually used for producing muscular energy. Such a ferment has been discovered by Nasse. In cane sugar, therefore, Goulston believes that we have a simple means for supplying the muscles with dextrose for the purposes of their activity. Dextrose, he declares, is capable of nourishing the heart muscle in a wonderful and peculiar manner. In his hands the good effect of taking cane sugar to improve the nutrition of the musculature of the heart has been quite in accordance with what was to be expected from the known physiology of the subject. He cites seven cases illustrating the clinical value of this mode of treatment. His cases include two of dilated heart in patients of advanced age; two of valvular heart disease; one each of postinfluenzal dilatation of the heart, heart strain and heart failure in pulmonary tuberculosis. Goulston uses granulated cane sugar, the patient taking as much as desire may dictate. Only occasionally was there a trace of sugar in the urine.

17. **Polypeptids and Gastric Contents.**—In connection with an investigation on the peptid-splitting action of pathologic fluids, the test proposed by Neubauer and Fischer has, in the authors' hands, yielded results suggesting an advocacy for that extended use which alone can determine its permanent utility. They say that it has yet to be demonstrated that the endo-enzymes of cancer cells possess abnormal characters and activities.

Lancet, London

March 18

13 Ankylostoma Infection. A. E. Boycott.
14 The Anthropology of Ancient British Races. A. Keith.
15 Salvarsan in Syphilis. J. McIntosh and P. Fildes.
16 Salvarsan in Syphilis. T. W. Gibbard and L. W. Harrison.
17 *Diagnosis of Gastric C[illegible] the Cleavage of Polypeptids. I. W. Hall an[illegible]
18 *The Iodin Method of [illegible] P. Turner and H. C. Catto.
19 An Egyptian Holy Man. C. G. Seligmann.

18. **Iodin Sterilization of the Skin.**—The observations made by Turner and Catto confirm the value of the iodin method of sterilizing the skin. They made careful bacteriologic investigations in thirty-two cases in which varied operative procedures were resorted to. In certain cases the B.P. tincture (2.5 per cent.) was employed, and in others the following solution: iodin, 30 gms.; potassium iodid, 40 gms.; distilled water, 500 c.c. Before using, this was diluted with an equal volume of methylated spirits, so that the strength of the solution was 3 per cent. For the satisfactory action of the iodin it is essential that the skin be dry. Shaving should be done with a sharp razor without lathering the skin or, if soap and water are used, the skin must be subsequently dried with a pad or towel and then washed over with ether and again dried before the iodin solution is applied. In acute cases the whole process is carried out on the operating table after the patient has been anesthetized. In ordinary cases the preparation is carried out in the ward. The iodized area is then covered with a pad or towel. Before commencing the operation a second application of the iodin solution is made, the skin being now in a thoroughly dry condition. In the thirty-two cases quoted in which the patients were prepared in this manner, a thin strip of the whole thickness of the skin was removed immediately after the first incision and conveyed to the laboratory in a sterilized test-tube plugged with cotton-wool. The investigation consisted in cultivating the piece of skin in nutrient broth for a period of seventy-two hours. At the end of twenty-four and forty-eight hours respectively, the culture was looked at, and at the slightest suspicion of turbidity, "hanging drop" preparations were made and examined. If the fluid remained clear the cultivation was allowed to proceed until 72 hours had elapsed, when it was always examined, both macroscopically and microscopically. In the cases in which microorganisms were present nutrient agar tubes were inoculated from the broth and the particular bacterium further studied and identified. In no case did the culture show the presence of contaminating organisms from the air. Healing was by primary union except in three acute cases in which drainage was necessary. In none did the iodin produce any dermatitis. Though the incisions were made in very varied situations, it is interesting to note that in the three cases in which the skin was infected the wound was in the groin.

Journal of Tropical Medicine and Hygiene, London

March 15

20 Further Researches on the Hyphomycetes of the Tinea Imbricata. A. Castellani.
21 Etiology of Elephantiasis. G. C. Low.

British Journal of Children's Diseases, London

March

22 *Splenomegaly [illegible] Jaundice Ending in Hepatic Cirrhosis ar[illegible] rks on the Splenomegaly of Inherited [illegible] F. P. Weber.
23 Treatment of [illegible] th Salvarsan. C. F. Marshall.
24 *Venous Murmurs Heard at the Root of the Neck in Children. C. Coombs.
25 Difference Between Manifestations of Rheumatism in Childhood and Adult Life. J. B. Barrett.

22. **Splenomegaly With Recurrent Jaundice.**—An investigative study has convinced Weber that moderate splenomegaly in children of from 5 to 16 years of age may be almost the only evidence of an inherited syphilitic taint, but in such cases Wassermann's seroreaction for syphilis (if available) would doubtless generally give a positive result. Other evidences of inherited syphilis are occasionally forthcoming; the teeth may be more or less of the Hutchinsonian type, there may be interstitial keratitis, persistent cracks at the corners of the mouth, a history of syphilis in the parents, or of inherited syphilis in brothers and sisters. The splenomegaly of inherited syphilis is often accompanied by occasional (usually only slight) attacks of obstructive jaundice and by excess of urobilin (and urobilinogen) in the urine. Hepatic cirrhosis, with or without ascites, may be associated with the splenomegaly, and at the time of death the hepatic cirrhosis in such cases is probably usually of the ordinary multilobular "hobnail" type. Though it seems doubtful that the cirrhosis of the liver in these cases is of specific syphilitic origin, it is quite possible that the presence of an inherited syphilitic taint may diminish the resistance of the liver toward the action of toxins (including alcohol) and render it specially liable to cirrhosis. The inherited syphilis in these cases may be—

but often is not—associated with some degree of "infantilism," i. e., more or less retardation in general physical development and especially in the sexual functions. In these cases great caution must be employed in regard to antisyphilitic, especially mercurial, treatment, probably on account of the general delicacy of the patients and their liability to renal and catarrhal complications. Iodid of iron seems to be useful. In these cases there is generally very little real anemia, even when the general appearance of the patient is cachectic; and anemia, if present, is often only temporary. In some cases, on the contrary, there may be a certain amount of polycythemia, probably of reactive nature, sometimes sufficient to constitute a symptom-complex, which might be termed "splenomegalic polycythemia of inherited syphilis in children." Other unknown (toxemic?) conditions may cause splenomegaly and recurrent jaundice in children, similar to that met with in cases of inherited syphilis. Abdominal crises (pain, etc.), of uncertain explanation, may occur occasionally both in the inherited syphilitic and in the other cases. Cases of "familial" splenomegaly occurring in two or more brothers or sisters may occasionally be connected with an inherited syphilitic taint, but familial splenomegaly in children is better recognized in connection with congenital chronic acholuric (so-called hemolytic) jaundice, and with primary splenomegaly of the "Gaucher type." Splenomegaly in children may be the most important sign of the presence of hepatic cirrhosis, when the former is either secondary to, or due to the same cause as, the latter. Some cases of splenomegaly in children with inherited syphilis probably ultimately present the characteristic, clinical features of splenic anemia or Banti's disease.

24. **Venous Murmurs.**—In a majority of children varying in age from 3 to 15 years, Coombs heard a murmur immediately below the sternoclavicular joint or joints. It was slightly commoner in boys. It was commoner and louder on the right side. This murmur was continuous, but accentuated at the beginning of systole and of diastole, especially the latter. It was at its loudest during the inspiration. Though often heard with the head in the erect position, it was in such cases heard more clearly, and in some other cases heard only, when the head was fully retracted. Lateral rotation of the head also made it more clearly audible. It is usually abolished when the patient lies down. It is produced in the internal jugular veins; by what mechanism is not clear to Coombs, though its accentuation by retraction of the head is no doubt due to the flattening of the veins against the transverse processes of the cervical spine. Though associated with anemia and febrile states, it is heard also in perfectly healthy children. It is not especially associated with tuberculosis or any enlargement of the intrathoracic lymph glands, and has no diagnostic value.

Medical Press and Circular, London

March 8

26 Talipes Equinovarus and Its Treatment. E. Gillespie.
27 The Retraction Ring as a Cause of Obstruction in Labor. R. Jardine.
28 A Case of Darier's Disease. G. G. Stopford Taylor.
29 The Marriage of Cardiac Subjects. D. Renon.

March 15

30 Congenital Torticollis or Wry Neck. G. L. Chiene.
31 Vision. W. R. MacDermott.
32 Lactation After Removal of Both Fallopian Tubes. J. C. McWalter.

Annales des Maladies des Org. Génito-Urinaires, Paris

February 15, XXIX, No. 4, pp. 289-383

33 *Study of the Functional Activity of the Kidneys by Means of [illegible] L. G. Rowntree and J. T. [illegible] Concluded in No. 5.
34 Te[illegible]cision. (Instrumentation moderne de la taille hypogastrique.) F. Cathelin.

33. Practically the same article appeared in the *Journal of Pharmacology and Experimental Therapeutics*, July, 1910, and was abstracted in The Journal, Aug. 20, 1910, page 720.

Archives des Maladies de l'App. Digestif, Paris

February, V, No. 2, pp. 49-108

35 Clinical Research on the Evacuating Function of the Stomach in Health and Disease. S. Kemp.
36 Dosage of Amylase in the Feces in Diagnosis of Pancreatic Functioning. C. Durand.

Archives de Médecine des Enfants, Paris

March, XIV, No. 3, pp. 161-240

37 *Septicemia and Glandular Lesions in Scarlet Fever. V. Hutinel.
38 *Excessive Enlargement of Breasts at Puberty. (Hypertrophie mammaire de la puberté.) H. Caubet.
39 *Clinical Signs of Hypertrophy of the Thymus. D'Oelsnitz.
40 *Recalcification Treatment of Tuberculosis in Children. J. Comby.

37. **Septicemia in Scarlet Fever.**—In the case reported by Hutinel the scarlet fever accompanied varicella. The principal scarlatinal lesions were in the throat and mouth and the mucosa sloughed off at several points with general symptoms of septicemia, rapidly proving fatal. The viscera were found practically sound but the thyroid, suprarenal capsules and pituitary body showed marked lesions entailing defective functioning. The symptoms of the varicella and of the ordinary scarlatinal syndrome were comparatively mild; he had encountered this combination in twenty other cases previously, none showing any signs of extra virulence on the part of either infection. The extreme virulence in the case reported was evidently due to the influence of the scarlet fever on the ductless glands. He reported last year a case of acute inflammation of the suprarenals during scarlet fever in a little girl who recovered. Tixier found both suprarenals destroyed by hemorrhages and the pancreas gravely affected, at necropsy of a child succumbing to malignant scarlet fever, and Comby has since encountered a similar case except that the pancreas was intact. Hutinel believes that the scarlatinal lesions in these ductless glands modify the composition of the blood and that this in turn permits the streptococci to enter the blood. In other cases the liver may be the organ to feel the influence of the scarlatinal infection most severely. Treatment should be guided by the signs indicating which of the internal organs are bearing the brunt of the infection—the liver if there seems to be hepatic derangement; the suprarenals if they seem to be at fault. In the latter case epinephrin may be indicated. In either case, baths to reduce excessive temperature and means to cleanse the throat without irritating it and to sustain the heart may all prove useful.

38. **Hypertrophy of the Breasts at Puberty.**—In the case described by Caubet, the mother had had similar hypertrophy of the breasts at puberty. No treatment is effectual except removal of the breasts and this was done in twenty-five cases on record, which he summarizes. The results were good in every instance. The breasts weighed each from nearly 2 to 8 kilos, that is, from 5 to over 17 pounds. In Caubet's case the breasts were shaped like watermelons, and reached below the umbilicus. His compilation includes only the cases developing at puberty; the lesions were simple hypertrophy of the elements of the gland with passive edema.

39. **Clinical Signs of Hypertrophy of the Thymus.**—D'Oelsnitz analyzes ten cases in which the thymus was excessively large for the patient's age and seven other cases in which its hypertrophy was suspected. Three of the patients died from sudden suffocation from this cause; some difficulty in breathing had been noticed before but had not been traced to its true source. These cases teach the importance of examining the thymus whenever no other cause can be discovered for labored breathing, occasional or constant. The results of thymectomy in time are good. Hypertrophy of the thymus should be suspected with stridulous laryngitis when the croup stridor is of unusual intensity and duration. Epistaxis was noted in one case—probably a result of the local mechanical congestion. An intercurrent infection is liable to increase this congestion and render evident a hitherto latent hypertrophy of the thymus. During the suffocation there is cyanosis of the face, also slight edema of the lids; exophthalmos was pronounced in one case and the fontanelles bulged in the younger children. The cyanotic tint may persist constantly and the children may be dull and apathetic. The veins in the neck may be constantly or occasionally congested. The dyspnea is greater lying down. Symmetrical palpation, especially of the suprasternal fossa, during expiration, is instructive, as also percussion. Primary tracheotomy was done on a mistaken diagnosis in two cases, and secondary to partial thymectomy in another. The results in all were disastrous. Intubation may

be necessary in connection with thymectomy when there is concomitant spasm of the glottis.

40. **Recalcification in Treatment of Tuberculosis in Children.**—Comby reviews what has been published to date on the subject of the deficiency in lime as predisposing to tuberculosis and treatment aiming to restore the lacking lime. Ferrier was the pioneer in this line, and he insists on individual prophylactic measures to prevent waste of lime by decalcifying dyspepsia and gastro-intestinal fermentations, refraining from fats, acids and cheese. Comby gives children twice a day before meals a powder containing calcium phosphate, 0.25 gm.; calcium carbonate, 0.2 gm.; calcium chlorid, 0.15 gm., and magnesia usta, 0.1 gm. After ten days he gives for ten days a teaspoonful of 0.03 per cent. aqueous solution of sodium arsenate, then resuming the powders for ten days, and so on. [Ferrier's method of antiacid and alkaline treatment of tuberculosis was described in The Journal, May 1, 1909, page 1465.] Davel and Ginepro have reported good results with the Ferrier method at Buenos Aires, and Comby endorses the recommendations of Sergent and Letulle. The method does not conflict with but supplements the ordinary dietetic hygienic measures.

Lyon Médical, Lyons

February 19, CXVI, No. 8, pp. 309-352

41 *The White Line Sign of Suprarenal Disease. (La ligne blanche de Sergent.) Maurice.

February 26, No. 9, pp. 353-408

42 Induced Pneumothorax. J. P. Morat.

41. **The White Line.**—Maurice has been studying Sergent's dermographic sign of suprarenal insufficiency, the white line that follows if the finger nail is drawn along the skin of the trunk. Sergent regards it as a manifestation of abnormally low artificial tension and this, in turn, as the result of insufficiency on the part of the suprarenals. Maurice's experience confirms the interpretation of the white line as a sign of suprarenal insufficiency, but it is also a sign of toxic vasoconstrictor excitability. It indicates not only suprarenal treatment but also restrictive dietetic measures and disinfection of the intestinal tract. Nervous persons presenting this sign should be relieved of nervous strain, especially those with a history of severe diphtheria or scarlet fever or with symptoms of tuberculosis.

Presse Médicale, Paris

March 4, XIX, No. 19, pp. 161-176

43 Malta Fever Simulating Pernicious Anemia. G. Rauzier.
44 Two Cases of Symmetrical Lipomatosis. R. Burnier.
45 Influence of Inherited Taint in Primary Localization and Geographical Distribution of Lesions in Pulmonary Tuberculosis. J. Molle.

March 8, No. 20, pp. 177-184

46 Localization of Bullets in the Tissues. (Localisation des projectiles dans les tissus.) H. Chaput and Vaillant.
47 *Flat-Foot and Tuberculosis. P. Gorse and Dautheville.
48 *Fleas in Transmission of Plague for Long Distances. A. Raybaud.

47. **Flat-Foot and Tuberculosis.**—Gorse and Dautheville state that thirty-six men out of 498 with flat-foot developed tuberculosis during their military service in their regiment, while there were only 157 cases among the 12,390 men with normal feet. The proportion was thus 7 per cent. among the flat-foot squad and only 1.2 per cent. among the rest.

48. **Dangers of Transmission of Plague to Long Distances by Intermediation of Fleas.**—Raybaud calls attention to recent announcements *that the rat flea, Ceratophyllus fasciatus,* is able to hibernate for a month or forty-five days without nourishment, and that virulent plague germs can persist unharmed in its stomach during this length of time and even longer. He thinks that this fact is of great importance for the transmission of the plague to a distance. The marmot or land otter of northern China and the rats of Manchuria are undoubtedly infested with these and other fleas. When the fleas leave the bodies of the animals that have succumbed to the plague, they may seek refuge in bales of goods or cracks of boxes and live there at a temperature which renders them torpid, practically hibernating, while the germs in their interior maintain their vitality and virulence. In this condition, the fleas may be carried with the freight across Siberia or shipped by water to long distances. As the authorities do not consider it necessary, he says, to disinfect freight, there is nothing to prevent the fleas arriving in good condition in other countries, ready to infect rats or human beings, whichever they happen to encounter.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XVI, No. 2, pp. 199-372. Last indexed Jan. 28, p. 310

49 Isthmus of the Uterus and Placenta Prævia. H. Bayer.
50 Justification of Pubiotomy. (Soll die Hebosteotomie ihren Platz in der operativen Geburtshilfe bewahren?) H. Fehling.
51 Efforts to Improve the Technic for Cesarean Section. (Weiteres über die modernen Bestrebungen zur Veränderung der Kaiserschnittstechnik.) H. Sellheim.
52 **Postoperative Peritonitis, Especially the Diarrheic Form.* E. Holzbach.
53 Determination of Capacity for Lactation. (Bestimmung der Stillfähigkeit nebst Statistik zur Beschaffenheit der weiblichen Brust und [illegible] C. Stieda.
54 *Histology of Ovarian* [illegible] J. Wätjen.
55 Abnormal Nucleated [illegible] ber abnorme Kernbildungen in den glatten Muskelfasern sowie über Mast- und Plasmazellen in Leiomyomen des Uterus.) B. Huguenin.
56 Hematoma of Masseter Muscle. (Eine typische Geburtsverletzung.) R. Hofstätter.
57 Finer Structure of Ganglion Cells in Ovarian Dermoids. A. Wolff.

52. **Diarrheic Postoperative Peritonitis.**—Holzbach warns that postoperative peritonitis may develop with an insidious course and slight general symptoms, profuse diarrhea being the chief sign of trouble. The peritonitis in these cases is a local infection of the pelvic cavity and can be conquered by prompt measures, walling off the small pelvis from the abdominal cavity above while the secretions are given free outlet. This is ensured by the low transverse incision which he prefers for operations on the ovaries, etc. *During the operation he also makes a point of walling off the pelvis with sponges* as a prophylactic measure. He cites a number of examples from his practice showing the prompt arrest of the diarrhea and subsidence of the peritonitis as soon as an outlet was provided for the pus or other secretions causing the trouble. Since he has made a practice of the above technic, the low transverse incision and the preventive gauze walling off of the pelvis, *he has had no further cases of the kind.*

Berliner klinische Wochenschrift

March 6, XLVIII, No. 10, pp. 413-460

58 Advantages of Lumbar Muscles as Site for Injection of Salvarsan. [illegible] aus den Lendenmuskeln und [illegible] Muskeln für die Injektion von [illegible] (New York).
59 *Physical Factors in Action of Poisons and Drugs. (Wirkung von Giften und Arzneimitteln.) J. Traube.
60 Negative Influence of Santonin on Glycosuria in Diabetes Mellitus. G. Walterhöfer.
61 *Iodin-Exophthalmic Goiter. (Zur Frage des Jodbasedows.) S. Goldflam.
62 Diagnostic Importance of Cutaneous Tuberculin Reaction. (Diagnostischer Wert der v. Pirquetschen Reaktion.) P. S. Wallerstein.
63 Treatment of Tuberculosis with Tuberculin Cutaneous Inoculations. (Behandlung der Tuberkulose mit Tuberkulin-Cutanimpfungen.) P. S. Wallerstein.
64 Repeated Extrauterine Pregnancy. (Wiederholte Extrauteringravidität bei derselben Frau.) A. Frank.
65 Localization of Sexual Instinct in the Brain. (Ueber die cerebrale Lokalisation des Geschlechtstriebs.) A. Münzer.
66 Serology of Gout. (Serologische Beobachtungen in betreff der Gicht.) F. A. J. Falkenstein. Commenced in No. 9.
67 Necessity for Private Sanatoria for Patients with Infectious Diseases. (Notwendigkeit privater Heilanstalten für Infektionskranke.) F. Meyer.

59. **Importance of Physical Properties of Poisons and Drugs.**—Traube's research on the drop-forming properties of the organic fluids and chemicals has convinced him that the physical properties are of far greater importance than has been previously recognized. He accepts as a biologic law of far-reaching import the phenomenon he has repeatedly verified in his research, namely, that a poison becomes less toxic for the medium as the latter becomes turbid under the influence of the poison—that is, when precipitation is under way. This precipitation may occur in ultramicroscopic form long before it is possible to detect it with the naked eye which has hitherto been the criterion. The greater the toxicity of the poison, the greater the physical changes which it induces in the medium; it follows, hence, that the less the physical changes induced, the less toxic the chemical in question. He believes that this opens new lines of research in pharmacology and therapeutics.

The organism, he is convinced, is a physical machine to an extent never hitherto realized. The phenomena reported throw light, he declares, on the problems of immunity and anaphylaxis. For instance, 1 drop of a one-half normal solution of potassium iodid added to 10 c.c. of a 0.2 per cent. solution of „*Nachtblau*, a colloidal basic dye, causes no change in the aspect of the fluid. It still appears extremely limpid, but this one drop of the iodid has transformed it into a condition of actual anaphylaxis. The mixture is now specifically hypersensitive to potassium iodid so that addition of a single drop more of the same potassium iodid solution is followed by heavy flaking—a specific precipitation.

61. **Iodin and Exophthalmic Goiter.**—Goldflam reports two instructive cases showing the danger of eliciting Basedow symptoms by therapeutic administration of iodin. The resulting disturbances are not the comparatively harmless and transient symptoms of iodism; on the contrary, the iodin seems to exert in these cases a specifically injurious action on the thyroid which persists after suspension and elimination of the drug. He warns that this is liable to occur whether the thyroid is perceptibly pathologic or not, especially with serous meningitis and incipient tabes, as well as with goiter and atherosclerosis. These iodin disturbances are by no means restricted to regions where goiter is prevalent. In his first case, symptoms of serous meningitis had existed for some months when a course of iodipin was instituted and was soon followed by tachycardia, enlargement of the thyroid and tremor of the fingers. In the second case a man of 34, who had been systematically treated for syphilis for years after infection at 20, developed incipient tabes. Considerable improvement was realized under subcutaneous injections of iodipin, when Basedow symptoms suddenly became manifest and were very distressing, particularly the severe diarrhea, emaciation and weakness. After suspension of the drug the symptoms finally completely subsided, proving their connection with the medication.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 1, XLI, No. 7, pp. 225-256

68 *Acute Hemorrhagic Pancreatitis. E. Monnier.
69 *Knee-Elbow Position with Ptosis of Viscera. (Knieellenbogenlage bei Ptosis gewisser Bauchorgane.) R. v. Fellenberg.

March 10, No. 8, pp. 257-288

70 Modified Technic for Wassermann Reaction. (Modifikation der Wassermann'schen Reaktion nach von Dungern.) O. Roth.
71 *Predisposition of Apices to Tuberculosis. (Prädisposition der Lungenspitzen und Inhalations-Tuberkulose.) G. Huguenin. Commenced in No. 6.

68. **Acute Hemorrhagic Pancreatitis.**—Monnier reports the details of four fatal cases with necropsy from his practice during the last eighteen months. Two of the patients were previously healthy druggists, 42 and 45 years old; the third was a drinking sailor, and the fourth an obese woman of 54 with cholelithiasis. The influence of trauma was evident in one case and of an acute intestinal affection in another. The necropsy findings indicate that acute pancreatitis is always accompanied with extravasation of blood into the glandular tissue, injuring it to such a degree that it falls a prey to autodigestion. This in turn leads to production of extremely toxic substances, and the only relief is by early operative intervention. If this is delayed until the pancreas is injured beyond repair, little can be anticipated from it, although Hahn reports recovery when the patient was already in severe collapse; he made a high incision, rinsed the abdominal cavity with salt solution and drained. The main point is to think of the possibility of acute pancreatitis when called to a patient with symptoms suggesting ileus, cholelithiasis, perforation peritonitis or appendicitis. The lack of rigidity of the abdominal wall, the temperature higher than with ileus, the peculiar sallowness and the obstinate pain in the epigastrium speak for pancreatitis, as also the fact that several quarts of water can be poured into the bowel; this generally brings stool and gas. The pain with appendicitis is seldom so intense and persistent as with acute pancreatitis. The persistence of the pain, the rapid aggravation of the condition and the symptoms suggesting ileus are evidence against cholelithiasis alone, although this is usually the primal factor for the acute pancreatitis.

69. **Knee-Elbow Position for Visceral Ptosis.**—Fellenberg remarks that the advantages of the knee-elbow position for correction of ptosis of various viscera is only recently attracting the attention it deserves. He reports a case of recurring attacks of pain and nausea and other disturbances explained only by the discovery of a right wandering kidney. As soon as the patient, a young woman, assumed the knee-elbow position she experienced relief, and she learned to use this as a prophylactic measure, before going out for a walk, for instance. She refuses operative relief and is delighted that she can keep herself free from disturbances by this simple measure. Until this had been suggested she was growing more and more emaciated from the pains and digestive disturbances consequent on the physical anomaly. The pains come on, Fellenberg assumes, at the moment when the stomach content is being passed on into the intestine, the latter being compressed by the movable kidney; the more copious the meal the severer the pain. The kidney drops forward as the patient assumes the knee-elbow position, leaving the passage free for normal evacuation of the stomach. He thinks the same measure might prove effectual in some cases for displacement of the uterus, for mechanical ileus, hydronephrosis, or gall-stone colics and especially for arteriomesenteric occlusion of the bowel.

71. **Predisposition of Apices to Tuberculosis.**—Huguenin analyzes the mechanism of the cough, showing how even under normal conditions it is difficult for the apices to expel secretions and foreign particles. Even at the best they are expelled mostly by the apex being forced up against the roof of the thorax; when there is an unusually small space in the cupola of the thorax the effect is much less and it is least when the apex is already shriveled or indurated. The muscles controlling the cough in this part of the chest are weaker than elsewhere. The bronchial ramifications curve even in a normal lung when the upper part of the thorax has lost its elasticity. With a rigid aperture, the apex may be shut off so that it is quite impossible for it to participate in the act of coughing. When these conditions prevail, the cough may actually force substances up into the apex from the lower part of the lungs, the effect being thus the exact opposite of normal conditions. He discusses further how the child may inherit the phthisical chest from one parent while inheriting unusual resistance to tuberculosis from the other. Wherever tuberculosis may gain a foothold, it gets to the apices almost inevitably sooner or later. The most frequent form of pulmonary tuberculosis is that which originates in infection of the lymph vessels in the neck or chest. In fully 60 to 70 per cent. of his cases the apices had evidently become infected in this way. In only 15 or 20 per cent. was there evidence to indicate direct inhalation as responsible for the apical process. He estimates at less than 20 per cent. the number of cases of pulmonary tuberculosis in children in which infection occurred by way of the intestines. In adults the proportion is much less, under 4.7 per cent. Huguenin does not mention droplet infection in the course of his monograph, as he has never encountered a case, he states, in which there was the least glimmer of probability of this method of origin. But he ascribes quite an important rôle in pulmonary tuberculosis to primary infection by way of the skin and urogenital organs. In his experience, further, fully 79 per cent. of tuberculous bone and joint processes were secondary to preexisting tuberculosis. In this connection, he mentions a family in his charge in which the mother had tuberculosis, and of the six children one had pulmonary tuberculosis, one kidney tuberculosis, one tuberculous glands in the neck, one spina ventosa and phthisis later, and one a tuberculous ulceration on the hand with spina ventosa of two fingers later but no apparent glandular trouble; only one daughter was apparently free from tuberculosis.

Deutsche medizinische Wochenschrift, Berlin

March 9, XXXVII, No. 10, pp. 433-480

72 *Diagnosis and Treatment of Multiple Sclerosis in Its Early Stages. E. Schultze. Commenced in No. 8.
73 *Digestion of Vegetables. (Ueber Gemüseverdauung bei Gesunden und Kranken und über die zerkleinernde Funktion des Magens.) A. Schmidt.

74 Early Cutaneous Recurrence of Syphilis After Salvarsan Treatment. S. Bettmann.
75 Reaction of Tuberculous Processes After Salvarsan Injections. K. Herxheimer and K. Altmann.
76 Technic for Salvarsan Injections. P. Schober.
77 *Psychopathology of Suicide. (Selbstmord.) M. Sichel.
78 *Chronic Mediastinitis. (*Das Krankheitsbild der chronischen* fibrösen Mediastinitis nebst Beiträgen zur Klinik der Mediastino-Pericarditis und Concretio pericardii cum corde.) K. *Radonicic.*
79 *Experimental Research on Pathogenesis and Treatment of Gout. S. Cohn.
80 Reflex Anuria from Sudden Chilling. A. Hörder.
81 The *Plague* in China. (Die Lungenpest auf ihrem gegenwärtigen Zuge durch China.) Martini.

72. **Multiple Sclerosis.**—Schultze calls attention to the rise of temperature which generally accompanies the apoplectic *seizures of multiple* sclerosis and differentiates them from ordinary cerebral apoplexy. He warns against the damage that may be done by a mistaken assumption of hysteria as the cause of the disturbances resulting from multiple sclerosis. In a case of the kind no attention was paid to the patient's complaint *that* she became dizzy and felt like falling; she was ordered to conquer this and to exercise as the best means of curing the assumed hysteria. This was the very opposite of what should have been done. Patients with multiple sclerosis should spare themselves any unnecessary efforts, stopping at the slightest fatigue, with frequent pauses for rest. With severe disturbances the patients should stay in bed. Gentle measures are the only ones to apply. A mild course of mineral baths may help by increasing the patient's confidence in himself although the spa physician ascribes it to the waters. The number of drugs that have been used in treatment shows that none is really effectual.

73. **Digestion of Vegetables.**—Schmidt has been unable to discover any evidence to sustain the assumption that the digestion of vegetables occurs mostly in the intestines and that it is mainly the work of microbes. Outside of the body these are the factors involved, but they act very slowly in comparison to the rapidity of the digestion in the body; an ox, for instance, digests 7 pounds of cellulose and hemicellulose in a day, while nothing to approximate this can be realized *in vitro.* The extent of the digestion of cellulose in man, besides, is by no means proportional to the intensity of the putrefaction *processes* in the intestines. *He reiterates* that man stands midway between the herbivora and carnivora; some individuals are to-day more herbivorous while others are more of the carnivorous type. The former can digest even raw turnips, radishes, cucumbers and green salads; while others are unable to digest perfectly even cooked potatoes and beans. These and other facts cited demonstrate, he thinks, that the digestion of vegetables in general depends on the length of time they remain in the gastro-intestinal tract, but, chief of all, on the acidity of the gastric juice. The acid in the gastric juice dissolves the interstitial substance, thus liberating the cells of the vegetable fibers and enabling the alkaline intestinal juices to act on the single cells. When the gastric juice is exceptionally acid, the vegetable cells are separated and the digestion proceeds so completely that the elements of the vegetable cells are all *taken up, leaving no waste to induce* peristalsis—This is Schmidt's explanation of the cause of constipation in certain cases: digestion is too perfect. The gastric juice is only able to dissolve protein, and is unable to do even this perfectly if the amount is *too large.* At the same time this dissolving faculty is *not* the exclusive function of the gastric juice; it is done also and much more thoroughly, he asserts, by the pancreatic juice. It is most injurious therefore for intestinal digestion to have the cells still massed together when the mass is passed on into the intestines. Whether the proteins are dissolved or not is comparatively immaterial. No process below can take the place of the lacking disintegrating action of the acid gastric juice. Undissolved connective tissue in the stools this testifies to the lack of proper gastric functioning in this respect. When the masses of either *meat* or *vegetable* are not *broken* up, the pancreatic juice cannot reach them and *they* linger undigested and afford lurking places for bacteria which in turn set up catarrh. The practical conclusion of the research reported emphasizes anew the *importance* of minute subdivision of the food *when the gastric juice* lacks the normal proportion of acid. The articles of food must be well cooked to loosen the *connective tissue* between the cells, and they must be ground in a *mortar* or *put* through a hair sieve. This mechanical subdivision of the *articles of* food is far more important than any other *feature of the diet,* he insists, and neglect of it soon avenges itself, especially in diarrhea or gastric origin.

77. **Psychopathology of Suicide.**—Sichel *found* evidence of mental derangement in a large proportion of persons who had attempted to commit suicide. *In Munich it* is the rule that every person who makes the attempt is sent to *an asylum for* study of his case. Sichel here reviews the different *forms of* nervous and mental disturbances in these would-be suicides.

78. **Chronic Fibrous Mediastinitis.**—Radonicic reports the details of eleven cases, *classifying them according* as the pathologic process was confined to the mediastinum *proper* or involved the pericardium or had *entailed fusion of the* pericardium. The ages ranged from 14 to 70. Fibrous *mediastinitis* is common, he states, but it is generally overlooked. One sign—the Oliver-Cardarelli—points unerringly to it; this is the downward pulsation palpable in the larynx. He explains the mechanism for this phenomenon which is *observed not only* with isolated fibrous bands in the mediastinum but also with involvement of the pericardium in *the mediastinitis and adherent* pericardium. There may also be a difference in the bloodpressure in the radial arteries in the recumbent *position, this difference* subsiding as the patient stands. This indicates also connective tissue cicatricial changes in the *mediastinum.* In a very few cases a systolic retraction of the chest wall in the entire left scapular region also *may* be *observed* with fusion of the pericardium with the pleura and the heart. This indicates *retrocardial* adhesion and the sign was marked in one of the cases reported. Radonicic has been unable to find any *mention of this sign* in the accessible literature. The fibrous *mediastinitis* was of tuberculous origin in the majority; in *the other cases* there was a history of pneumonia, cancer of the esophagus, rheumatism or syphilis. Anthracosis was encountered but once. Except for the constant difficulty in swallowing, the subjective symptoms were rare and vague; only a few patients complained of a burning pain in the chest or vague sensations back of the sternum. In conclusion, he discusses the interpretation of the radiographic findings.

79. **Gout.**—Cohn explains gout as the result of an overabundance of sodium; this promotes the development and persistence in the *body* of sodium urate which as it is deposited in the tissues forms the gouty tophi. On the other hand, he says, *potassium may be regarded* as an antidote for the sodium; the sodium-urate deposits can occur only in tissues *deficient in potassium,* such as connective tissue and cartilage. These assumptions explain the prevalence of gout among persons whose *food contains* a preponderance of sodium, such as meat, especially rare meat, as blood is one of the substances richest in sodium, averaging 19 parts sodium in 1,000 parts blood. Potatoes, on the other hand, contain the largest proportions of potassium, and those whose food consists mainly of potatoes are thus supplied in abundance with the potassium antidote to the sodium urate deposits.

Medizinische Klinik, Berlin

March 5, VII, No. 10, pp. 363-400

82 Determination of Destruction of Leprosy Bacilli in the Human Body. P. G. Unna.
83 Carbohydrate Courses in Diabetes. (Kohlehydratkuren *bei* Diabetes.) R. Kolisch.
84 Strabismus. (Das Schielen.) C. Cohen.
85 *Serotherapy in Toxemias of Pregnancy. R. Freund.
86 *Case of Fatal Arsenic Poisoning After Administration of Salvarsan in Treatment of Cerebral Syphilis. A. Jorgensen.
87 Clinical Pathology of Vestibular Apparatus. C. Stein.
88 Dissemination of Leprosy Bacilli in Disease of *Respiratory* Tract. L. Merian and C. Solano.

85. **Serotherapy of Pregnancy Auto-Intoxication.**—Freund has been applying serotherapy for eighteen months in treatment of toxemias of pregnancy and he thinks that his success justifies further trials of the method. He injected from 20 to 80 c.c. of freshly drawn horse serum in six patients with puerperal eclampsia and in each case there were only from one to four convulsions thereafter. He has recently injected the serum from healthy pregnant women near term *into* four

women with serious pregnancy disturbances—a psychosis and dermatosis with uncontrollable vomiting, neuralgia and jaundice in the first case. Marked improvement followed the third day after injection of 24 c.c. of the serum and complete recovery after the second injection a week after the first. This patient was a woman of 24, three months pregnant. In three other cases the eclampsia persisted after delivery; in the first case a total of 58 c.c. of serum was injected during the day, after the twelfth convulsion; seven other convulsions followed, after which the patient, a girl of 15, rapidly recovered. Five convulsions followed the injection of 40 c.c. of serum, preceded by withdrawal of 400 c.c. of blood, in the second case and recovery was uneventful. In the third case the eclampsia did not develop until after delivery and there were no convulsions after injection of 36 c.c. of serum preceded by venesection, after the patient had had eleven convulsions. Freund's experience thus supplements that recently reported by Mayer and Linser with serotherapy of pregnancy toxicoses, but he urges examination of the blood by the optic method in all such cases to obtain a scientific basis for estimation of indications, in addition to the data learned by empiric observation. [Compare Abstract 129 below.]

86. This seems to be the same case previously reported by Ehlers, mentioned in THE JOURNAL, Nov. 26, 1910, page 1941.

Münchener medizinische Wochenschrift

March 7, LVIII, No. 10, pp. 497-552

89 *Local Anesthesia for Major Operations on Breast and Thorax. G. Hirschel.
90 Desquamating Erythrodermia. (Stellung der Erythrodermia desquamativa im Krankheitssystem.) E. Moro.
91 Influenza? J. Trumpp.
92 *Psychic Disturbances with Chronic Cocain Intoxication. H. Higier.
93 Recurrences in Nervous System After Administration of Salvarsan in Syphilis. (Ueber die Neurorezidive nach Salvarsan, über Abortivheilung und weitere Erfahrungen.) J. F. Werther.
94 Salvarsan in Syphilis and Optic Neuritis. (Salvarsanbehandlung und Neuritis optica.) F. Schanz.
95 Salvarsan in Leprosy. (Einfluss des Salvarsan auf die Leprabazillen.) D. E. Montesanto.
96 Trichloracetic Acid as Efficient Substitute for Carbon Dioxid Snow in Treatment of Skin Diseases. G. Knauer.
97 Technic for Carbon Dioxid Snow Treatment. (Tubus zur Behandlung mit Kohlensäureschnee.) M. Kuznitzky.
98 Technic for Relief in Peritonitic Ileus. M. Kaehler.
99 Gastric Fever. A. Schneller.
100 Medicolegal Diagnosis of Epilepsy. K. Heilbronner. Commenced in No. 9.

89. Local Anesthesia for Major Operations on the Chest.—Hirschel states that at Wilm's service at Heidelberg 487 major operations were done under local anesthesia in 1905 and the number has doubled and more each year since. He gives an illustrated description of the technic for amputation of the breast. He outlines the field of operation with a series of ten injections of the anesthetic, pointing the needle in four directions to spread the fluid. The first puncture in the axilla is the only one that is painful, the others being all at previously anesthetized points.

92. The Mental Disturbances with Chronic Cocain Poisoning.—Higier comments on the fact that the action and symptoms of a single acute poisoning with cocain are very different from those of chronic intoxication. It is not an accumulation of single intoxications, but an entirely different action on the nervous system. In a case described a dentist was taking 5 gm. of cocain daily. Heimann had a case in which 8 gm. was the daily dose and Sollier had a patient who occasionally took up to 12 gm. The needle punctures leave traces of brown almost black pigmentation; this is a sign peculiar to cocain. The paresthesias are not located at the periphery but on the trunk, and they produce the subjective impressions of foreign bodies under the skin. Most characteristic of all is the delirium with hallucinations; it resembles more the alcoholic delirium; but there are no objective signs of liquor drinking. The patient during the delirium can reason logically and behave normally in regard to surrounding objects until unconsciousness supervenes, the condition thus differing from that of ordinary drunkenness. With the cocain there is at first an exalted self-consciousness, followed by dyspnea and distress. Further testimony to the cocain as the cause of the mental disturbances is the favorable influence of morphin; morphin is almost an antidote for cocain poisoning. Higier adds that the hallucinations may drive the patient to commit suicide, which is an extremely rare occurrence in alcoholic delirium, even the most aggressive. Cocain can be suppressed abruptly, he continues; there is little reaction, while recurrence, he says, is rare. He denounces as false the statement in some of the works on toxicology in regard to habitual cocainomania, declaring that cocain addiction is readily curable.

Therapeutische Monatshefte, Berlin

March, XXV, No. 3, pp. 145-208

101 *Study of the Resistance and Ultra-Sensitiveness of the Animal Body to Chemical Agents. H. Hildebrandt.
102 Non-Operative Treatment of Inflammatory Gynecologic Lesions. (Nichtoperative Behandlung entzündlicher Frau- [illegible] Freund.
103 [illegible] in Malaria. (Moderne Malariathera- [illegible]
104 *Dangers of Hydrotherapeutic Procedures for Infants. Haussen.
105 Technic of Intravenous Injection of Large Amounts of Fluids. G. Schwartz.
106 *Tribute to Efforts of the A. M. A. ("Nach amerikanischem Muster"). W. Heubner.

101. Resistance and Hypersusceptibility to Chemical Agents.—Hildebrandt discusses some of the recent additions to our knowledge in regard to anaphylaxis and resistance of the animal body to certain chemicals, concluding with a description of experimental work which seems to demonstrate that the hemolytic action of certain chemicals is annulled by the cholesterin element in the serum. This explains the benefit which Grimm observed in malaria under ingestion of cholesterin; the latter had an inhibiting effect on the hemolytic action of the malarial parasite. Hildebrandt suggests that similar benefit might be obtained in eclampsia from systematic administration of cholesterin. Hemolytic factors are certainly involved in the eclampsia syndrome, he thinks, and possibly the lack of substances with an affinity for fat may be responsible for this; administration of cholesterin might supply this lacking lipophilous substance.

104. Dangers of Hydrotherapeutic Procedures for Infants.—Hanssen reports three out of a larger number of cases in which an ordinary brief warm bath or a mustard pack was followed by threatening collapse on the part of infants 6 or 8 months old, with severe catarrhal enteritis, capillary bronchitis with eczema of the face or in infants convalescing from anemia following long overfeeding with cow's milk. Children entering the hospital should not be given a bath by the nurses before the child has been inspected by the physician or without his orders. If collapse occurs under any hydrotherapeutic measure Hanssen advises repeated injections of camphorated oil, with warm bottles and inhalation of oxygen. It is possible that such accidents from hydrotherapeutic measures are more common in children with the exudative diathesis or, rather, with the neuropathic tendency which generally accompanies it. Czerny has reported sudden fatalities under the first cold pack in neuropathic children. It is wiser, consequently, to refrain from hydrotherapeutic measures altogether with children of this exudative diathesis plus a neuropathic tendency, and especially from mustard packs which in other cases may prove so useful.

106. The Americans Set the Pace.—Heubner comments on the way in which his compatriots frequently wind up a very exaggerated statement by saying: "in true American style." He remarks that he read this expression recently in an article on the fraudulent advertising of certain proprietaries, which, it was stated, was "in true American style." Heubner then goes on to say that he wishes to inform his compatriots that in their attitude toward the abuses in the proprietary medicine business, "they are far behind the stand taken by the medical profession in America, whose American Medical Association has, on its own initiative and with its own forces, successfully organized means to supply every physician with reliable bases for his appreciation of new remedies." He adds: "In connection with the publication of a report of the Council on Pharmacy and Chemistry of the A. M. A., on the fraudulent statements made in advertisements of the preparation Formurol, put out by the Falkenberg firm (Berlin-Grünau), an editorial note states as follows (THE JOURNAL, Jan. 21, 1911, page 210)":

This report illustrates once more the value of the Council on Pharmacy and Chemistry and the Chemical Laboratory to the medical profession. Before the Council was organized there was no agency to protect the physician's interests in the matter of pharmaceuticals. Under the old régime Formurol would have been heralded as a new "synthetic" of the most approved made-in-Germany type—and the claims would have gone unchallenged. To-day its status is made clear and the profession is informed. Only those who have closely studied the question can realize what a wonderful power for commercial probity the Council has proved. Under the *laissez faire* system of the past many large pharmaceutical firms gave little attention to the accuracy of the claims made for their products. If the advertising gave good "pulling" results, that was all that was asked or expected. Within the past five years a wonderful change has taken place in this regard, and firms of the better class have so modified their advertising as to make it not only conservative in tone, but to approximate scientific accuracy.

Heubner passionately exclaims after quoting this editorial note in full: "*'Laissez faire'!* How long, how long is this going to apply to us still in Germany! *(Wie lange wird es bei uns noch so heissen?)*"

Therapie der Gegenwart, Berlin

March, LII, No. 3, pp. 97-144

107 Treatment of Gout. (Behandlung der Gicht mit Phenylchinolcarbonsäure—Atophan—nebst Bemerkungen über die diätetische Therapie der Krankheit. W. Weintraud.
108 Roentgen-Ray Treatment of Cancer. (Aussichten für die Behandlung maligner Tumoren mit Röntgenstrahlen.) C. Müller and G. Klemperer.
109 Serotherapy of Tetanus. (Zwei mit hohen Antitoxingaben behandelte Fälle von Tetanus.) Everling.
110 Climatic Treatment of Hay Fever and Nervous Asthma. C. Widmer.
111 Inadequacy of Substitutes Offered for the Lung Suction Mask. (Ersatzmittel der Lungen-Saugmaske.) E. Kuhn.
112 *Recent Achievements and Problems of Chemistry. E. Fischer.

112. New Achievements of Chemistry.—In this address delivered recently by Professor Emil Fischer he comments on the way in which the discovery of radium has upset the preconceived notions in regard to the unchangeability of the chemical elements, and then remarks that in all this new work on radium the Germans have been merely passive lookers-on. This was owing to the fact that Germany has no radium-bearing ore and that few German scientists have means to purchase the expensive element. But he congratulates his country now on the discovery, by O. Hahn of Berlin, that several radioactive elements are present in the by-products of thorium used in the manufacture of mantle lights. He has isolated the bromid of mesothorium, one of these elements; it has radioactive power similar to radium. The small lump of the mesothorium which Fischer exhibited is equivalent, he stated, to 100 mg. of pure radium bromid, and it cost nearly $3,000. The Berlin Academy of Sciences is soon to have 250 mg. of this mesothorium at its disposal to loan to German scientists. The waste of the thorium manufactures in Germany will produce enough mesothorium annually to be the equivalent of 10 gm. of radium bromid—more than there is of the latter in the world to-day. Then, he intimates, Germany will have something to say for herself on the subject of radium. She was the pioneer in organic synthesis, commencing with Wöhler's artificial production of urea, and he stated that in his laboratory the most complicated substance thus produced by synthesis has recently been perfected. The raw materials for the production of the minute amount yet made cost about $250, but what to-day is merely a scientific toy and curiosity may to-morrow prove of wide practical importance; chemistry has many such fairy-tales to relate. He commented further on the close chemical relationship between the coloring matter of the plants and the blood-pigment. This seems to show a close blood relationship between the animal and vegetable kingdoms. Among the synthetic substances he described as recent achievements in science are synthetic caffein, which is now made extensively from guano, and synthetic epinephrin, made from coal tar.

Wiener klinische Wochenschrift, Vienna

March 2, XXIV, No. 9, pp. 299-334

113 Psychology and Pathology of the Emotions. (Zur Psychologie und Pathologie der Affektion.) J. Berze.
114 *Comparative Tests for Tubercle Bacilli in Tissues. (Wert der Antiforminmethode für den Tuberkelbazillennachweis im Gewebe.) C. Hart and O. Lessing.
115 Heart Murmur and Size of Heart. (Herzgeräusch und Herzgrösse.) P. Biach and D. Chilaiditi.
116 Microsporon Epidemic Scalp Disease at Vienna. R. O. Stein.
117 *Glandular Fever. (Adenoiditis acuta; ein Beitrag zur Lehre vom Drüsenfieber.) F. Schleissner.
118 Mechanism of Functioning of Leg with Paralyzed Quadriceps. O. Semeleder.

March 9, No. 10, pp. 335-370

119 *Permeability of the Meninges, Especially in Progressive Paralysis. E. Weil and V. Kafka.
120 Urine Content in Albumin and Tube-Casts While Taking a Course of Sulphate Waters. E. Pflanz.
121 Banti's Disease. K. Ungar.
122 The Cancer Problem. (Das Problem der Krebskrankheit.) A. Fraenkel.

114. Determination of Tubercle Bacilli in Tissues.—Hart and Lessing state that tubercle bacilli do not lose their vitality even when the tissues are cut into frozen sections and treated with formol for half an hour. Animals inoculated with the tissues contract tuberculosis. Even when the frozen sections are stained with hematoxylin and differentiated with hydrochloric acid and alcohol, and after glycerin embedding are dissolved with 15 per cent. antiformin, still the tubercle bacilli are capable of infecting animals. Systematic examination in this way of the entire lymphatic apparatus is liable to throw light on a number of disputed problems. It is their impression that tuberculous infection of children is preeminently a dirt infection, occurring by way of the mouth, throat and intestine, while adults become infected by aspiration of the tubercle bacilli.

117. Glandular Fever.—Schleissner is convinced that what has been called acute glandular fever is very often merely inflammation of adenoid vegetations. Differentiation is difficult at first; the fever suggests an acute eruptive disease or gastro-intestinal or respiratory affection. In infants, the clinical picture may be that of a retropharyngeal abscess; the fever may keep up for several days and frequently recurring attacks may suggest tuberculosis. The peculiar shape and elastic consistency of the indolent tough glands is important for differentiation. Usually the attack runs its course in a few days. In one case otitis media developed. There was no tendency to nephritis in any of his cases. He does not advise active measures in treatment during the attack; the swelling of the glands usually subsides spontaneously. The children are generally of the exudative diathesis type, and it is wise to change the diet and limit the amount of food, hoping thus to influence the constitutional anomaly. It was his impression that considerable benefit followed in his cases, and he urges others to give this dietetic treatment a trial, limiting the children to a pint of milk a day at most and ordering a vegetable diet when this is possible.

119. Permeability of the Meninges.—Weil and Kafka have been testing the permeability of the meninges by determining the presence of antibodies in the cerebrospinal fluid. They tabulate the findings in forty-four cases. Fully 97 per cent. of the twenty-four patients with progressive paralysis gave a positive response while the findings were constantly negative in twenty controls with other nervous affections.

Zentralblatt für Chirurgie, Leipsic

March 4, XXXVIII, No. 9, pp. 305-344

123 *Successful Direct Transfusion of Blood by Suture of Blood-Vessels. (Zur Frage der direkten Bluttransfusion durch Gefässnaht.) H. Flörcken.
124 The Coxa Vara Question. W. Hagen and G. Drehmann.

123. Direct Transfusion of Blood by Suture of Blood-Vessels.—Flörcken applied this measure as a last resort in a case of staphylococcus bacteriemia. The patient was a woman of 24 with no history of hemophilia; during convalescence there was sudden hemorrhage from the nose, gums, rectum and stomach, the catheter brought only pure blood and there were petechiæ at the slightest external irritation. The blood seemed to be of normal constitution but the hemoglobin had dropped to 30 per cent. by the sixth day and the usual measures gave no permanent results. An older step-sister gave the blood for the transfusion; her left radial artery was sutured to the left median vein of the patient, the left hand of the sister lying in the bend of the patient's elbow. The lumina of the two vessels were protected by paraffin from drying and they were sutured together according to Carrel's technic. The difference in the size of the two vessels made the suture difficult but the procedure proved successful. The connection was kept up for half an hour, during which time the patient visibly revived; there were no further hemorrhages and she was soon restored to health.

Zentralblatt für Gynäkologie, Leipsic

March 4, XXXV, No. 9, pp. 337-384

125 *Advantages of Trendelenburg Position for Obstetric Procedures. (Beckenhochlagerung in der Geburtshilfe.) E. Bumm.
126 Etiology of Placenta Prævia. O. Hoehne.
127 Eclampsia in Sixth Month of Pregnancy with Hydatidiform Mole without a Fetus. A. Sitzenfrey.
128 *Paroxysmal Tachycardia in Connection with Spontaneous Delivery. E. Langes.
129 *Serotherapy of Pregnancy Dermatoses. (Normales Schwangerenserum als Heilmittel gegen Schwangerschaftsdermatosen im besonderen und Schwangerschaftstoxikosen überhaupt.) A. Mayer.
130 *Treatment of Uterine Cancer. A. Theilhaber.
131 Reposition of Retroflexed Uterus. ("Eine neue leichte Methode der Reposition des retroflektierten Uterus.") M. Hirsch.

March 11, No. 10, pp. 385-432

132 Cultivation of Anaerobes in Obstetrical Cases. (Zur Anaerobenzüchtung in der Geburtshilfe.) O. Bondy.
133 Differentiation of Hemolytic Streptococci by Lecithin Bouillon. H. Mächtle.
134 *Pseudomenstruation. M. Neu.
135 *Roentgen Rays in Gynecology. (Neue radiotherapeutische Erfahrungen in der Gynäkologie auf Grund von 100 gutartigen Blutungen und Tumoren des Uterus.) C. J. Gauss.
136 Pathology of Universal Hydrops of the Fetus. R. Teuffel.

125. **The Trendelenburg Position in Obstetrics.**—Bumm calls attention to the advantages of raising the pelvis in doing obstetric operations, especially during extraperitoneal Cesarean section, and for internal version, bringing down the foot with breech presentation, prolapse of the umbilical cord, management of brow and face presentation, etc. By raising the pelvis the heavy uterus slides down out of the way and gives ample space for the obstetrician's hand. The more the presenting part is pressed down into the pelvis, the greater the favorable influence of the Trendelenburg position. In a recent case of transverse presentation, he was able to bring down a foot with ease when the pelvis was raised, the sliding down of the uterus causing a relaxation of the walls which, he is convinced, materially reduced the danger of rupture during the version.

128. **Paroxysmal Tachycardia with Spontaneous Delivery.**—Langes reports a case and cites two others from Zangemeister's experience in which paroxysmal tachycardia was observed in women with previously sound cardiovascular systems. In two cases the anomaly passed without leaving appreciable disturbances but in the other case acute dilatation developed, which must have impaired more or less the integrity of the mitral valve. A sudden increase in the pulse-rate may therefore be observed with normal delivery even with a sound heart, and this possibility should not be forgotten in cases suggesting internal hemorrhage.

129. **Serotherapy of Toxemias of Pregnancy.**—THE JOURNAL, February 4, page 388, mentioned a case of recurring pregnancy herpes which subsided after injection of 10 and 20 c.c. of serum from a healthy pregnant woman near term. Mayer here reports an additional case in which serotherapy was used for urticaria with severe pruritus in a healthy woman at term, and the affection promptly subsided. The pruritus returned a week later as labor commenced but ceased abruptly as delivery was complete. In two other cases of pregnancy toxicosis the serotherapy had a similar promptly beneficial effect, the pruritus ceasing at once after injection of the serum. He suggests that all kinds of pregnancy toxic disturbances, including eclampsia, albuminuria, hyperemesis, tetany and possibly osteomalacia might be benefited by this serotherapy. The aim is to supply substances present in the normal pregnant human organism, the lack of which is causing the trouble; horse serum consequently would not answer the purpose. He used serum exclusively from women giving a negative Wassermann reaction and apparently entirely healthy. [Compare with Abstract 85 above.]

130. **Treatment of Uterine Cancer.**—Theilhaber is convinced that defective nourishment of the mesodermal tissue is an important factor in development and recurrence of cancer. Consequently, retention of the ovaries may aid in preventing recurrence after removal of the uterine cervix by the flux of blood to the region at the menstrual periods. He cites statistics to show that the end-results are more satisfactory with partial operations than is generally conceded. Schröder has 40 per cent. still in good health of ninety-six patients treated by intravaginal or supravaginal amputation of the cancerous uterus from four to eleven years ago. Theilhaber emphasizes the necessity for distinguishing between the origin and the growth of a cancer; when the cancer is once installed, then particularly favorable conditions for nourishment, as in the young, promote the growth of the cancer. But he presents evidence to show that cancer does not start in well-nourished tissues. Another argument in favor of the partial operations is that there is less cicatricial tissue left and thus less predisposition to malignant disease. For these and other reasons cited, he now makes a practice of amputating the cancerous cervix in the vicinity of the internal os uteri. He also makes a point of promoting the circulation in the region afterward by inducing regional hyperemia with superheated air, sitz baths, etc. The patients are all tested for the Wassermann reaction and mercury and iodid given with positive findings.

134. **So-Called Postoperative Pseudomenstruation.**—Neu says that an apparently regular menstrual hemorrhage occurred two or three days after an operation on the uterine adnexa in each of his fifty-four cases of the kind since he has been studying the subject. His conclusion is that it is a true menstrual phenomenon for which the irritation from the operation gave the impulse.

135. **Roentgen Rays in Non-Malignant Gynecologic Disease.**—Gauss thinks that the time has come to cease to regard this method of treatment as still untried and unreliable. The first tentative efforts to utilize the Roentgen rays in gynecology are now long past and the method has reached a stable footing. He has been applying it for over four years and in 200 cases; he here analyzes the remarkably favorable end-results as observed in 100 cases during the last two years during which time the technic has been practically uniform. The report issues from Krönig's clinic at Freiburg, and Krönig's endorsement of the method was mentioned in these columns, Aug. 27, 1910, page 812, and Schindler's endorsement, December 17, page 2187. Gauss here discusses the various groups of cases, going into minute details in order to present the subject in its true light. The younger the patient the longer the course of treatment required. Myomas require about two months in women over 50 and three additional weeks in women under 45, while other hemorrhagic uterine affections require from nine to fifteen weeks before amenorrhea is definitely installed. Recent improvements in technic permit the necessary total dose of radiant units for a myoma to be incorporated in less than a month, the tumor rapidly shriveling under the influence of the rays. He summarizes in two charts the time and dosage required in the two classes of cases.

Zentralblatt für innere Medizin, Leipsic

March 11, XXXII, No. 10, pp. 249-272

137 *Percussion with Patient Leaning Against a Masonry Wall. (Wandperkussion.) G. Wenzel.

137. **Wall Percussion.**—Wenzel has found that percussion findings are much more characteristic and instructive when the patient stands with the back against a stone or brick wall. The findings in the supraclavicular and subclavicular fossæ are much more pronounced and characteristic when the patient, the trunk disrobed, rests his back against a masonry wall.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 5, XXXII, No. 28, pp. 291-306

138 Pathogenesis of Pellagra. (Patogenesi della pellagra e la nuova dottrina fotodinamica.) G. Ghedini.
139 Serotherapy of Glycosuria. (Sul meccanismo di azione dei sieri antiglycosurici.) L. Castriota.

Policlinico, Rome

March 5, XVIII, No. 10, pp. 293-324

140 Diagnosis and Treatment of Cholera. T. Pontano.

Riforma Medica, Naples

March 6, XXVII, No. 10, pp. 253-274

141 Salt-Poor Diet in Treatment of Ascites from Cirrhosis of the Liver. C. Achard.
142 Persistence of Cholera Germs in Dejecta of Convalescents. A. Montefusco.
143 Polymorphous Erythema in the Tuberculous. P. Ciuffini.
144 Kala-Azar in Sicily. (Qualche considerazione a proposito di un nuovo caso di anemia da leishmania—xxiii—osservato a Palermo.) S. Cannata.

Ugeskrift for Læger, Copenhagen

March 9, LXXIII, No. 10, pp. 324-356

145 *Connection Between Syphilis and Heart Disease. (Syfilitiske Hjertesygdomme.) V. Bie.

145. **Heart Disease and Syphilis.**—Bie is convinced that the frequency of syphilis as the causal factor of heart disease is underestimated. In his experience he found among eleven tabetic patients that one had well-defined insufficiency of the aortic valves and another the same in a milder form. Among seventeen patients with aneurysm of the aorta he found unmistakable evidences of syphilis in fourteen, that is, in 82 per cent. The Argyll-Robertson sign was positive in five of the sixteen examined and the knee-jerk was absent in three in this group as also in two others. In short, seven of the sixteen patients with aneurysm of the aorta presented unmistakable signs of incipient tabes. Analysis of the hospital records shows, he continues, that the knee-jerk was absent in 27 of 511 patients under treatment in the last two years. In this group of twenty-seven, eight had tabes and three dystrophy of the muscles, alcoholic neuritis or paraplegia. The remaining sixteen patients had either pneumonia or malignant disease of the stomach, with the exception of a child with mitral stenosis and a woman with chlorosis. Examination of the total pneumonia records showed that the knee-jerk was absent or feeble in 49 per cent. of the patients; this demonstrates that pneumonia alone is liable to abolish the knee-jerk. In the twenty-three cases of aortic valvular defect there was a history of acute articular rheumatism in nine, and of tabes in three, while there was a history of syphilis in four others. Only one of the seven patients with aortic insufficiency for which no explanation was evident was of an age to suggest the possibility of syphilis; the others were near or under 20. Similar analysis of the group of eighty-five patients with myocarditic or coronary disturbances showed that eleven were certainly and four probably syphilitic. Among the 187 cases of mitral defects at the hospital in the last ten years, acute rheumatism or chorea was known in the history of 120 of the 160 examined, and scarlet fever, pneumonia or puerperal fever in some of the other cases, but nothing of syphilis except in one case. The average age of the patients with mitral defect was 30, while with syphilitic aortic disease it was 42, for aneurysm of the aorta, 50, and for syphilitic myocardium trouble, 52. There is thus an interval of nearly fifteen years between the clinical development of these affections on a rheumatic and a syphilitic basis. It seems evident that syphilis attacks preferably the aorta and myocardium, while it spares the mitral valve. The connection between tabes dorsalis and heart disease in syphilitics is evident from the aortic disturbances so frequently noted in patients with tabes but still more by the frequency of symptoms of tabes observed in the course of heart or valvular affections, the absence of the pupil reflex in particular. The facts observed suggest, Bie thinks, that the heart affections in question are more closely allied to the parasyphilitic than to other kinds of late syphilitic affections.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

GENERAL MEDICINE. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Volume I. The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series 1911. Cloth. Price, $1.50. Pp. 405. Chicago: The Year Book Publishers.

A MANUAL OF PRACTICAL INORGANIC CHEMISTRY. Including Preparations and Qualitative and Quantitative Analysis with the Rudiments of Gas Analysis. Specially Adapted to Cover Preliminary and Intermediate University Courses and the First Three Stages of the Syllabus of the Board of Education. By A. M. Kellas, B.Sc. (Lond.), Ph.D. (Heidelberg) Lecturer on Chemistry at the Middlesex Hospital Medical School. Cloth. Price, $1.35. Pp. 347, with 51 illustrations. New York: Oxford University Press, 1910.

REPORT OF THE PRESIDENT OF STATE CHILDREN RELIEF BOARD, THE HON. C. K. MACKELLAR, M.B., C.M., M.L.C. For the Year Ended April 5, 1910. Legislative Assembly, New South Wales. Presented to Parliament pursuant to Act No. 61, 1901, Sec. 10. (Second Session.) 1910. Paper. Pp. 83.

THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D., *Professor* of Dermatology in the University of Illinois. Second Edition. Cloth. Price, $6. Pp. 1079, with 356 illustrations. New York: D. Appleton & Co., 1911.

A BRIEF TEXT OF PHYSIOLOGY. For Dental, Pre-Medical, and College Students. By Carl J. Wiggers, M.D., Department of Physiology, University of Michigan. Cloth. Price, $1.50. Pp. 207, with 47 illustrations. Ann Arbor: George Wahr.

REPORT OF THE MASSACHUSETTS COMMISSION TO INVESTIGATE THE QUESTION OF THE INCREASE OF CRIMINALS, MENTAL DEFECTIVES, EPILEPTICS AND DEGENERATES. January, 1911. Paper. Pp. 50.

THE INTERNATIONAL MEDICAL ANNUAL. A Year-Book of Treatment and Practitioner's Index. 1911. Twenty-Ninth Year. Cloth. Price, $3.50. Pp. 748. New York: E. B. Treat & Co.

PREVENTION OF INFECTIOUS DISEASES. By Alvah H. Doty, M.D., Health Officer of the Port of New York. Cloth. Price, $2.50. Pp. 281. New York: D. Appleton & Co., 1911.

New Patents

Recent Patents of Interest to Physicians

968232. Respiratory helmet. Harry Bentz, Larchmont, N. Y.

968481. Cottage or tent house. Philip A. Kessler, Chicago.

967943. Making hydrocyanic acid. Otto Liebknecht, Frankfort-on-the-Main, Germany.

968378. System for cooling and dispensing beverages. Mark W. Marsden, Philadelphia.

967949. Portable combination hammock and tent. Elliott B. Meredith, Forest Depot, Va.

968491. Liquid measuring and dispensing apparatus. Edward E. Murphy, Winchester, Mass.

967990. Producing clear stannic-chlorid solutions. Elmer A. Sperry, Brooklyn.

968209. Massage machine. Walter G. Trautman, Cleveland, Ohio.

968017. Bed-tent. Stephen G. Wilson, Philadelphia.

968306. Apparatus for administering anesthetics. Mario J. Wunderlich, Guatemala, Guatemala.

968728. Truss. Harry G. Ballou, Seattle, Wash.

968528. Generating oxygen. Andre Beltzer, Bridgeport, Conn.

968532. Charging capsule for siphons. Domingo Brescia, Quito, Ecuador.

969147. Foot-warming attachment for electrothermal garments. Burton R. Charles, Portland, Ore.

969134. Surgical instrument. Charles S. Cowie, Culpeper, Va.

968757. Inhaler. George O. Ferguson, Denver.

969099. Invalid rest. Henry Fuchs, Allegheny, Pa.

968932. Bed and douche pan. Joseph E. Gavin, New York.

969106. Thermometer. William Jandus, Cleveland, Ohio.

969073. Oxygen bath. Otto B. May, New York.

968704. Device for the treatment of rectal troubles. Charles M. Siebert, Jr., Columbus, Ohio.

969687. Awning or window tent. Irving Farlin, Battle Creek, Mich.

969464. Apparatus for forming water bags and other hollow articles. Akron, Ohio.

969474. Making basic sulphate of lead. Albert Hileman, Hollidaysburg, Pa.

969480. Electric switching apparatus. Samuel T. Hutton, Chicago.

969351. Invalid's bedrest. Olin La Dow, Arcola, Ill.

969640. Tampon. Lewis G. Langstaff, New York.

969291. Stopper and dropper. Richard L. Larson, Minneapolis.

969485. Vapor-generating apparatus for medical treatment. Joseph Lesperance, Montreal, Quebec, Canada.

969547. Ozonizer. Oscar Linder, Chicago.

969381. Making artificial cryolite. Gerhard Loesekann, Hanover, Germany.

969174. Invalid bedstead. Angus MacDonald, Melrose, Mass.

969657. Spray nozzle. James Reade, Huntington, N. Y.

969196. Ankle-joint for artificial limbs. James F. Rowley, Chicago.

969661. Generating formaldehyd. Hans Schneider, Hamburg, Germany.

969420. Oleic-acid derivative bodies of the terpene group. Nathan Sulzeberger, New York.

969736. Apparatus for sterilizing and oxidizing liquids with ozone. Alexander H. Twombly, Summit, N. J.

969579. Surgical instrument. Constantin Waldvogel, Pittsburg.

969933. Production of ferric salts. Anson G. Betts, Troy, N. Y.

969942. Thumb-sucking preventer. Albert B. Crandall, Red Wing, Minn.

969853. Making liquid sodium amalgam. Herbert P. Ewell, Detroit.

970215. Preparation impermeable for Roentgen rays. Oscar Gros, Leipsic, Germany.

969885. Making sodium cyanid. Otto Liebknecht, Frankfort-on-the-Main, Germany.

970077. Metal capsule. C. W. V. Messerschmidt, Copenhagen, Denmark.

970112. Making compounds of the active substance of suprarenal glands.

970357. Hospital or invalid's bed. John G. Segesman and G. Binggeli, Salem, Ohio.

970145. Making formic acid. William H. Walker, Boston.

NEW AND NONOFFICIAL REMEDIES, 1911

THIS BOOK contains the medicinal substances which, prior to Jan. 1, 1911, have been examined by the Council on Pharmacy and Chemistry of the American Medical Association, which appeared to comply with the rules of the Council and which therefore were accepted for inclusion in the annual "New and Nonofficial Remedies." The acceptance of the articles included in the book has been based in part on evidence supplied by the manufacturer or his agent, and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the annual revision of the matter are requested.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

This book is issued annually. During the year descriptions of further medicinal substances accepted by the Council for inclusion in "New and Nonofficial Remedies" will be published in THE JOURNAL from time to time.

W. A. PUCKNER, Secretary.

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OFFICIAL RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY

Introduction.

Object of the Rules.—The following rules have been adopted by the Council with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles.

Contents of N. N. R. The "N. N. R." contains a description of such proprietary articles as have not been found to conflict with the rules of the Council; and of such simple non-proprietary and unofficial substances as seem of sufficient importance.

Attitude on Mixtures. Proprietary pharmaceutical mixtures should comply with the rules and will be investigated by the Council. The Council, however, endorses the principle that prescriptions should be written on the basis of the therapeutic effects of the individual ingredients. For this reason, it does not include mixtures in this book unless they present some real advantage. If, however, the physician wishes to prescribe ready-made proprietary mixtures, he will find in the appendix, listed under the name of the manufacturer, those proprietary mixtures which on examination have not been found to conflict with the rules.

Non-proprietary Mixtures. Non-proprietary mixtures share the status of the substances from which they are prepared, and therefore are not contained in the book.

Rules Governing the Admission of Proprietary Articles to the Book, "N. N. R."

Definition of Proprietary Articles.—(The term "proprietary article," in this place shall mean any chemical, drug or similar preparation used in the treatment of disease, if such article is protected against free competition, as to name, product, composition or process of manufacture; by secrecy, patent, copyright, or in any other manner.)

Rule 1.—Composition.—No article will be accepted for inclusion with "New and Nonofficial Remedies" unless its composition be furnished to the Council for publication. For simple substances the scientific name and the chemical formula, rational or structural if known, should be supplied. For mixtures the amount of each active medicinal ingredient in a given quantity of the article must be stated. The general composition of the vehicle, its alcoholic percentage, and the identity of the preservatives, must be furnished.

Rule 2.—Identity.—No article will be accepted unless suitable tests for determining its composition are furnished to the Council. In the case of chemical compounds these shall consist of tests for identity and purity. In the case of mixtures, methods shall be furnished for determining the amount and active strength of the potent ingredients if practicable.

Rule 3.—Direct Advertising.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, advertised for uses other than on the human body, or to non-medicinal food preparations, except when advertised in an objectionable manner.

Rule 4.—Indirect Advertising.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is said to be indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to vaccines and antitoxins, or to directions for administering or applying remedies where similar immediate, heroic treatment is indicated.)

Rule 5.—Fraudulent Claims as to Origin.—No article will be admitted or retained concerning which the manufacturer or his agents make false or misleading statements as to source, raw material from which made, or method of collection or preparation. The identity of the actual manufacturer of the article must be furnished.

Rule 6.—Unwarranted Therapeutic Claims.—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

Rule 7.—Poisonous Substances.—The principal label on an article containing "poisonous" or "potent" substances must state plainly the amount of each of such ingredients in a given quantity of the product.

Rule 8.—Objectionable Names.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, unsatisfactory or objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration. Names which suggest diseases, pathologic conditions or therapeutic indications will not be admitted. In the case of pharmaceutical preparations or mixtures the trade name must be so framed as to indicate the most potent ingredients.

Rule 9.—Patented Products and Protected Names.—If the article is patented—either process or product, or both—the number of such patent or patents should be furnished to the Council. Furthermore, if the name of an article is registered, or the label copyrighted, the registration (trade-mark) number and a copy of the protected label should be furnished the Council. In case of registration in foreign countries the name under which the article is registered should be supplied.

Rule 10.—Unscientific and Useless Articles.—No article will be admitted which, because of its unscientific composition, is useless or inimical to the best interests of the public or of the medical profession.

Explanatory Comments on the Rules.

Introduction.—*History, Purpose, and Method.*—The Council on Pharmacy and Chemistry was established in February, 1905, by the American Medical Association, primarily for the purpose of gathering and disseminating such information as would protect the medical profession in the prescribing of proprietary medicinal articles. In pursuance of this object the Council examines the articles on the market as to their compliance with definite rules which are designed to prevent fraud, undesirable secrecy and the abuses which arise from advertising to the laity. Such articles as appear to conform to the rules are admitted and their essential features are described in the annual publication of the Council, the "N. N. R.," if they come within the scope of this book.

Submitted Evidence.—This description is based in part on investigations made by or under the direction of the Council, but in part also on evidence or information supplied by the manufacturer or his agents. Such interested statements are examined critically, and are admitted only if they appear to be in conformity with the evidence. It is, however, manifestly impossible for the Council to investigate the composition of every complex pharmaceutical mixture, or thoroughly to check every therapeutic claim; it can only give an unbiased judgment on the submitted evidence. Criticisms and corrections of the descriptions which may aid in the revision of the matter will be appreciated.

Previous Infringements and Fraud.—The Council judges an article entirely by the facts existing at the time of its admission. Previous infringements of the rules (short of *intentional* fraud) do not prevent the favorable consideration of an article, provided that they have been thoroughly corrected.

Reconsideration.—Infringements after admission, or the discovery that the Council's information was incorrect, will cause the acceptance to be reconsidered.

Acceptance Not an Indorsement.—The Council desires physicians to understand that the admission of an article does not imply a recommendation. It means only that no conflict with the rules has been found by the Council.

The Scope of the "N. N. R." and Appendix.—To aid physicians and manufacturers in deciding what articles come within the scope of this book, or, in other words, to enable physicians to recognize whether an article has been omitted because it does not need admission or because it has been rejected, the Council furnishes the following more detailed definitions:

Official Articles.—The status of the articles which are official in the United States Pharmacopeia or in the National Formulary naturally does not require the approval of the Council. Since authoritative information concerning them is readily obtainable, they have no place in the "N. N. R."

Nomenclature.—To avoid confusion with non-official substances marketed under similar names the Council recommends that they be prescribed by their official Latinized title, followed by the abbreviation, "U. S. P." or "N. F.," thus: Tincturæ Nucis Vomicæ U. S. P. 5 Cc., Elixir Gentianæ N. F. 95 Cc.

Trade Names. Priority. Imitations of Official Articles. "Trade names," protected or otherwise, for these articles will not be recognized by the Council unless they antedate the recognition of the article in the United States Pharmacopeia or National Formulary. Nor will non-essential modifications of official or non-proprietary preparations be recognized. Essential and important modifications, however, will be accepted and will receive individual *mention in the "N. N. R."*

Substances Described in the "N. N. R."—In the body of the book will be described simple proprietary substances and their preparations when these are marketed by the original manufacturer; proprietary mixtures if they have originality or other important qualities which entitle them to such place; and important non-proprietary unofficial articles.

Suffix "N. N. R."—The Council recommends that when these latter are prescribed, they be indicated by the abbreviation, "N. N. R." thus insuring to the prescriber the quality of these articles laid down in the book.

Proprietary Mixtures.—*Definition.*—A mixture will be considered as proprietary, and therefore requiring consideration by the Council and admission to the book or appendix, if it contains any proprietary article; if it is marketed under a name which is in any way protected; or if its manufacturer claims for it any unusual therapeutic qualities.

Where Listed.—All proprietary mixtures which are marketed in conformity with the rules are listed in the appendix of the "N. N. R." under the names of their manufacturers. They are not admitted to the body of the book, save in the exceptional cases cited in the preceding paragraph.

Non-Proprietary Mixtures of Official Substances.—Since the ingredients of such mixtures do not require the approval of the Council, and since the mixtures are not open to the proprietary abuses which called for the work of the Council, it is not necessary that they should be investigated and approved by the Council. The physician should judge whether such mixtures should be directed to be prepared by the pharmacist, or whether he is justified in ordering a ready-made preparation. If he decides to use a ready-made non-proprietary preparation he must judge for himself if it is marketed in accordance with the rules.

Trade Names.—It should also be remembered that the application of trade names to any substance makes it proprietary.

Objectionable Trade Names for Official Substances.—The application of "trade names" to official or established non-proprietary products tends to confusion and fosters many abuses. It can only be condoned if the "trade name" possesses priority as previously defined. Such trade names will therefore not be admitted by the Council except in those few cases in which the trade name has already come into extensive use.

Use of Firm Names.—The protection of the manufacturers can be amply secured by appending the firm or "brand" name to the official name, and to this there can be no objection. Appended names or initials of manufacturers as in Mistura Rhei et Sodæ. X. Y. & Co.; Mixture of Rhubarb and Soda, "Jones;" Pills of Aloes and Iron, "Smith brand," are considered non-proprietary.

Generic Names.—Protected generic brand names shall not be regarded as proprietary. However, the preparation "Adrenalin suppositories" is proprietary because the name adrenal itself is protected.

Unessential Modifications of Official Substances.—*Imitations.*—The subterfuge for obtaining proprietary rights over an official or established non-proprietary product, by introducing unessential modifications, also tends to confusion and abuses, and such articles will not be admitted by the Council. Essential and important modifications, however, will receive recognition. (The Council interprets the term "established non-proprietary product" to apply to a preparation or any formula which has been published through any recognized or reasonably accessible channel of publication, prior to its appropriation or modification by a manufacturer.)

Explanatory Comments on the Rules Governing the Admission of Proprietary Articles.

Rule 1.—Composition.—*Secrecy Objectionable.*—It is not only the right but the duty of the physician to know the essential composition of what he prescribes; the Council cannot compromise on this proposition.

Vehicles and Preservatives.—In the case of mixtures not only the potent ingredient, but also the general character of vehicle, the presence of alcohol, and the identity of preservatives, or of any other substance, whether added or present as an impurity, must be stated, if these can under any circumstances affect the action of the article. This generally does not mean the publication of such trade secrets as flavors or the details of the working formula.

Trade Secrets.—Furthermore, trade secrets will not be received as confidential by the Council, since it accepts information only with the distinct understanding that this may be freely published, at its discretion.

Inspection of Factories.—Nor does the Council accept invitations to inspect factories; its concern is with the finished products.

On the other hand, the Council requires that the information be complete and accurate as to the medicinal ingredients.

Unofficial Constituents.—Unofficial constituents of proprietary mixtures must be submitted by the manufacturer in the regular way and must be approved by the Council before the preparations containing them can be admitted.

Fraud.—When it appears that a manufacturer has made a *deliberately* false statement concerning his product he is asked to furnish an explanation: and if this is not satisfactory the product will not be admitted, even if the false statement is subsequently corrected or omitted.

Testimonials.—This applies not only to statements made to the Council, but also to statements furnished to physicians by the manufacturer or his agents, even when these statements are in the guise of testimonials.

Rule 2.—Identity.—In order to avoid errors in the case of chemical compounds, and to guard against adulterations, lack of potency or strength and the mistaking of one chemical for another, it is necessary to have at hand suitable tests.

Tests, etc.—If these facts have appeared in the literature, or in standard text-books, reference to them will be sufficient; but with new chemicals, especially synthetics, the manufacturer or his representatives will be required to supply such tests for publication, in order that an intelligent opinion of these products may be assured.

Physiologic Standardization.—In cases in which chemical methods of identification are unknown or unreliable, physiologic standardization should be employed. The Council considers the phrase "physiologically standardized" or "assayed" as misleading unless the standard and method are published in sufficient detail to permit of their control by independent investigators.

It is evident that when no standard is published, it is impossible to know whether the quality is high or low, and the conscientious manufacturer who sets for himself a high standard is placed on a level with the dishonest or careless one who adopts a low standard. Again, if the process is not published, it is impossible to learn without actual trial the relative value of one preparation as compared with that of another manufacturer or to confirm or disprove the statements of the manufacturer as to the quality of his product.

Rule 3.—Direct Advertising. — *Lay Advertising.* — The impossibility of controlling the irresponsible claims which are usually made in advertisements to the public, the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the many diseases described, the dangers of an unconscious and innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and contagious diseases when hidden from the physician, and similar well-known considerations, are the reasons for discouraging, in the interest, and for the safety, of the public, this reprehensible form of exploitation.

Exceptions.—In the case of subjects on which the public should be instructed, as the use of disinfectants and foods, such advertisements, if not in objectionable forms, are considered admissible.

Foods.—We may divide the foods into three groups. The first group contains the ordinary foods, including the well-known breakfast foods. These do not come under the supervision of the Council in any way. The second group includes medicinal foods proper, such as predigested foods, which have a relatively low food value and which are characterized by a high alcohol or preservative content, and which frequently contain strictly medicinal substances, or food substances for which distinct therapeutic properties are claimed. These products should be used only on the advice of the physician, and the advertisements should be restricted as in the case of ordinary medicines. The third group includes a large and important class of manufactured products, such as invalid and infant foods, which in a sense stand between the first and second groups. The public has the same interest in these foods that the physician has, and usually has full information concerning them. While the primary recommendation of these articles should naturally come from the physician, it cannot be expected that their continued use should depend on repeated prescriptions. Information concerning this group of foods would come naturally and properly from a physician, and the collection and dissemination of this information may very properly be included in the work of this Council. As the use of products in this class is an extended one, it is not proper to limit their advertising to medical journals, but the advertising should be permitted in the lay press so long as it is conducted in a manner compatible with the rules of the Council.

Rule 4.—INDIRECT ADVERTISING.—It should be remembered that the sole intent of this rule is to protect the physician, so that in prescribing a proprietary medicine he need not unconsciously become an advertising agent of proprietors. The rule imposes no restriction on the legitimate methods of bringing a remedy to the attention of the profession, such as advertising in medical journals, circulars and other printed matter distributed solely to physicians. The rule applies only to the package as it may reach the patient.

Naming Diseases on Label.—The naming of diseases on the label or package is not necessary, as is shown by the very large number of proprietary products which have been successfully introduced without resorting to this expedient. This method of popularizing a proprietary remedy with the laity is most objectionable, and should not be tolerated in any form.

Therapeutically Suggestive Names.—The Council considers therapeutically suggestive names (see Rule 8) as an unworthy expedient to the same end. It would prefer to have therapeutic indications omitted from the label and package, but does not insist on this point, because these are useful in some exceptional cases.

Permanently Affixed Names.—It will be considered an infringement of the rule when an article is marketed in bottles which have the name of the article blown into the glass, or if otherwise the name or initials or other distinctive mark of the article are permanently stamped on the container, on the article itself, or are contained on the stoppers or seals. Articles which are marketed in any of these ways are not admitted. Readily removable labels are not objectionable.

Use of Articles for Advertising.—The Council does not countenance the use of an admitted article for advertising other articles which have not been admitted by the Council.

Rule 5.—FRAUDULENT CLAIMS AS TO ORIGIN.—No false or misleading statement in regard to an article can be permitted concerning the source or material from which it is made, or the persons by whom it is made. Some glaring frauds of this nature have been perpetrated in the past, and this rule is intended to prevent such imposition.

Actual Manufacturer.—The identity of the actual manufacturer of an article should be known, since the manufacturer is in part responsible for the quality of the product. No good reason can exist for concealing the identity of the manufacturer of a legitimate article; such concealment must be considered evidence of the doubtful character of a product or its method of exploitation.

Rule 6.—UNWARRANTED CLAIMS AS TO THERAPEUTIC VALUE. —This rule is intended to restrict the direct and indirect claims of the manufacturers or agents as to the therapeutic superiority of their products, to what is compatible with ascertained facts: Manufacturers will be held responsible for all statements referring to their products, made in their advertising literature, whether they occur as original statements or as quotations. The Council aims to be quite liberal in the application of this rule. There are honest differences of opinion as to many therapeutic questions.

Permissible Optimism.—It is natural that a manufacturer should be rather partial toward his own product, and, since every one should be cautious in accepting such biased claims, a moderate degree of emphasis may not be objectionable. The Council, therefore, does not assume to censor any reasonable statements, especially when such statements are confirmed by responsible clinicians.

Exaggerated Claims.—Claims are often made, however, which are incompatible with common experience and which sometimes defy the laws of Nature. Claims which seem highly improbable will not be admitted by the Council unless the manufacturer supports them by evidence acceptable to the Council. In doubtful cases the Council acts on these questions under the advice, and with the cooperation of its staff of clinical consultants.

Rule 7.—POISONOUS SUBSTANCES.—For the information of the pharmacist or dispenser, and to enable him to safeguard the interests of the patient and the physician, all articles containing such potent agents as the poisonous alkaloids and other organic substances and the salts of some of the metals, should have the exact amount of these ingredients which is contained in the average adult dose stated on the label.

Rule 8.—OBJECTIONABLE NAMES.—Many of the abuses connected with proprietary medicines are intimately associated with the more or less arbitrarily selected or "coined," usually protected, names.

Scientific Names.—In the interest of those physicians who would prefer to employ a more rational nomenclature the Council advises the use of scientific names by the manufacturers, at least as synonyms. In view of the existing trade conditions, however, it does not insist on this except in such specific cases as explained below in which experience has shown the necessity of restrictions.

Pharmaceutical Preparations and Mixtures.—Since these, with rare exceptions, are not original in composition, there is no sufficient reason why they should be endowed with arbitrary names; on the contrary, it is important that the prescribing physician should be constantly reminded of the potent ingredients on which the actions of such preparations are based. It is particularly important that actively poisonous or habit-forming drugs be not disguised under an innocently worded title.

Coined Names Where Permitted.—The Council recognizes, on the other hand, the right of discoverers of new synthetic products or active principles to name their discovery, and interposes no objection to arbitrary names for such products, so long as such names do not tend to advertise the product to the laity, as specified under Rule 8. It is desirable, however, that the coined names should indicate the chemical composition of the article. With synthetic chemicals the true chemical name should be stated, at least in addition to the trade name. If an article conflicts only with Rule 8 it may be admitted as soon as the manufacturer substitutes a name which the Council considers satisfactory.

Rule 9.—PATENTS, TRADE-MARKS, COPYRIGHTS, ETC.—This information is desirable in determining the legal status of these articles and will permit their ready recognition in current publications.

Rule 10.—UNSCIENTIFIC AND USELESS ARTICLES.—The Council has been justly criticized because its rules failed to exclude certain unscientific mixtures whether of well-known or obscure substances. The use of articles which are unessential modifications of official or established non-proprietary articles is unscientific and serves no useful purpose. The Council will not admit products which are scientifically unsound and which, therefore, must be considered useless or inimical to the best interest of the medical profession and the public. This class includes mixtures containing an excessive number of ingredients; those which contain substances of no probable therapeutic assistance to each other; those of no therapeutic value. The combination of two or more remedies in a mixture must be considered contrary to scientific medicine unless a distinct reason exists for such combination. This holds especially for ready-prepared mixtures, and these shall be deemed in conflict with Rule 10 unless the manufacturer presents satisfactory evidence for the value of his combination.

NEW AND NONOFFICIAL REMEDIES

ACETOZONE.—Acetozone is a mixture of equal parts of acetyl-benzoyl peroxide and an inert absorbent powder.

Acetyl-benzoyl peroxide, $C_6H_5CO.O.O.COCH_3 = C_9H_8O_4$, corresponds to hydrogen peroxide, H_2O_2, in which the two hydrogen atoms have been replaced by the radicles of acetic acid (the acetyl group) and of benzoic acid (the benzoyl group).

Acetyl-benzoyl peroxide occurs in white, shining crystals, melting at 36.6° C. (98° F.). When heated it slowly decomposes and volatilizes. Water at 25° C. (77° F.) dissolves one part in 1.560 or 0.639 Gm. in 1,000 Cc. It is soluble in oils to the extent of about three per cent., slightly soluble in alcohol, and fairly so in ether, chloroform, and carbon tetra-chloride, though all solvents slowly decompose it with the exception of neutral petroleum oils.

In the presence of water it undergoes hydrolysis and slowly decomposes. This change, however, does not take place with sufficient rapidity to prevent its use in aqueous solution; in fact such hydrolysis is necessary to develop its full germicidal activity. On account of its ready decomposition, acetozone should be kept in a dry place.

For various reasons it has been found necessary to add an inert absorbent powder. As found in the market, acetozone is of a grayish white color, possessing the properties of the crystalline substance, with the exception that the absorbent powder employed is insoluble.

Actions and Uses.—Acetylbenzoyl peroxide belongs to a class of compounds known as the organic peroxides in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. On contact with water it hydrolyzes, forming benzo-peracid and aceto-peracid, which exert marked oxidizing and germicidal action. In consequence of this change, these compounds are thought to be particularly adapted for internal administration.

It is said to be useful as an antiseptic in ophthalmic, aural and nasal practice, and to give good results by acting as an intestinal antiseptic when given internally, especially in typhoid fever.

Dosage.—Acetozone is generally employed in aqueous solution prepared as follows: Add acetozone to warm water in the proportion of 1 Gm. to 1,000 Cc. (15 grains to the quart), shake vigorously for five minutes, and allow to stand for about two hours. Decant the liquor as required. This solution may be drunk *ad libitum*, two quarts or more being taken by an adult in twenty-four hours. Acetozone is also used in oily solution as an inhalant.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents No. 710,005 (Sept. 30, 1902; expires 1919) and No. 717,016 (Dec. 30, 1902; expires 1919). U. S. trademark.

Acetozone Inhalant.—Each 100 Gm. contain acetozone 1.0 Gm.; chloretone (chlorbutanol), 0.5 Gm.; refined liquid petroleum, 98.5 Gm.

ACETPHENETIDIN

ACETPHENETIDIN.—Acetphenetidin is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physician's Manual of the Pharmacopeia and the National Formulary.

Actions and Uses.—This is one of a large group of derivatives or chemical relatives of aniline (amino-benzene). The members of this group have similar properties and are more or less active according as they undergo decomposition in the system so as to yield either para-amino-phenol or acetyl-amino-phenol. They have a more or less pronounced action on the blood by which they produce hemolysis and destruction of the red blood corpuscles. They also act as heart depressants.

Acetphenetidin and its congeners are antipyretics and analgesics. They are extensively employed for the relief of pain. For this purpose they should be used with caution in consideration of their poisonous properties.

They have also been considerably employed for the reduction of temperature in fever. Every newly discovered product related to acet-phenetidin has been heralded as a "safe" antipyretic and free from poisonous effects on the blood and heart. Invariably extended clinical experience has shown that all these preparations are to a greater or less degree hemolytic and depressing to the circulation. Hence their employment in the infectious fevers should be most cautious.

PHENACETIN.—Phenacetin is a name applied to Acetphenetidinum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co. Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 400,086 (expired); U. S. trademark Nos. 16,392 and 18,637.

AGAR-AGAR.—Agar-agar (Agar-agar, Pharm. Française, 1908) is a substance extracted in the East Indies from various sea weeds.

This substance seems to come principally from Eucheuma gelatinum, E. spinosum (Linné) J. Agardh., Gelidium corneum (Hudson) Lam., G. cartilagineum Gaill., Gloiopeltis tenax (Turner) J. Agardh.

Agar-agar is extracted by hot water and dried for commercial purposes in the form of bundles of shreds, or powder form. It is odorless and insipid, insoluble in cold water but soluble in hot water. A solution containing 1.5 per cent. gives quite a stiff jelly on cooling.

Agar-agar consists practically of gelose, which dissolves in 500 parts of water and is precipitated in an impure form by alcohol. Gelose is a carbohydrate which is converted into galactose on boiling with dilute sulphuric acid. On drying at 100° C. agar-agar loses about 20 per cent. of water. 100 parts of dry substance furnish about 4 parts of ash, which, when treated with hydrochloric acid and examined with the microscope, shows the presence of diatoms, the most characteristic of which are Arachnoidiscus—Ehrenbergii Baill. and several Grammatophora and Cocconeis. An aqueous solution of agar-agar gives no precipitate with solution of tannic acid (absence of gelatin), and no blue color with solution of iodin (absence of starch).

Actions and Uses.—Agar-agar absorbs water in the stomach and intestines and forms a jelly, which being indigestible increases the bulk of the feces.

It is employed as a demulcent and for the treatment of constipation.

Dosage.—From 5 to 15 Gm. (75 to 240 grains). Agar-agar is administered in substance, coarsely comminuted and mixed with food.

AGARIC ACID.—Acidum Agaricum.—Acidum Agaricinicum (Pharm. Helvetica, edit. 4.) Agaricinum[1] (Pharm. Danica, edit. 1907). A tribasic acid $C_{19}H_{36}OH\ (COOH)_3 + 1\frac{1}{2}H_2O$, derived from Polyporus officinalis, Fries (Order Hymenomycetes; fam. Polyporeæ) a fungus growing on the European Larch and other species of larch.

Agaric acid occurs as an odorless, tasteless, glistening micro-crystalline powder, which melts at 141.5-142° C. (286.5-287.5° F.). When heated to a high temperature it is volatilized in the form of a white pungent vapor.

Agaric acid is slightly soluble in cold water; when heated with 50-100 parts of water, it becomes gelatinous and finally dissolves to a weakly acid solution, which possesses the characteristic property of foaming strongly when shaken. The addition of acids to hot aqueous solutions of agaric acid causes white flocculent precipitate, but a tannic acid solution (1:100) produces neither coloration nor turbidity. With alkalies agaric acid forms water soluble salts.

Agaric acid is slightly soluble in ether, chloroform, carbon-disulphide and in 130 parts 90 per cent. alcohol. It is soluble in hot acetic acid, acetic ether, oil of turpentine and in about 10 parts of alcohol.

If to a mixture of about 0.2 Gm. of agaric acid with 3 Cc. of water 2 drops of alcoholic alpha-naphthol solution (1:8) are added and then gradually 5 Cc. of concentrated sulphuric acid added the mixture should not take on a marked blue-violet color.

If 0.10 Gm. agaric acid be boiled with 10 Cc. dilute sulphuric acid a turbid solution results, from which on standing on a water bath, oily drops separate, and they crystallize on cooling.

0.1 Gm. agaric acid upon ignition should leave no weighable residue.

Action and Uses.—Agaric acid is a local irritant and in large doses produces vomiting and purging, and death through central paralysis. It paralyzes the peripheral nerves of the sweat glands, arresting the secretion of sweat. It is used to arrest colliquative sweats. The experience of most clinicians is favorable, but some report that they were unable to obtain any favorable effects. The action appears in a few hours and is not lasting. Agaric acid is one-twentieth as active as atropine and does not influence other secretions.

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[1] The substance commonly sold as agaricin is an impure alcoholic extract

Dosage.—The maximal single dose of agaric acid should not exceed 0.03 Gm. (½ grain) and the total daily dose should not exceed 0.10 Gm. (1½ grains) (Pharm. Helv.). Owing to its irritant action it cannot be given hypodermically.

ALBARGIN.—Gelatosesilver.—Albargin is a compound of silver nitrate with gelatose, containing from 13 to 15 per cent. of silver.

It is prepared by adding silver nitrate to a solution of gelatose in water, evaporating the solution or precipitating the compound by the addition of ether or alcohol. It is a coarse, yellow, shining powder, very easily soluble in water, forming neutral solutions. The presence of gelatose, silver and a nitrate can be shown by appropriate tests. It is incompatible with tannin and chlorides.

Actions, Uses and Dosage.—Albargin is used as a substitute for silver nitrate.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

Albargin Tablets. Each tablet contains albargin 0.2 gm. (3 grains).

ALPHOZONE.—Succinic Dioxide.—Succinic Peroxide, Disuccinyl Peroxide.—Alphozone, $(COOH.CH_2.CH_2.CO)_2O_2 = C_8H_{10}O_8$, is succinylic acid peroxide, corresponding to hydrogen peroxide, H_2O_2, in which the hydrogen has been replaced by two succinic acid groups; each succinic acid radicle still retaining one of its acid-hydrogen atoms.

It is prepared by the interaction of a strong solution of hydrogen dioxide with succinic anhydride, resulting first in the formation of succinic peracid, $COOH.CH_2.CH_2.COOOH$, which reacts with one molecule of succinic anhydride to form succinic peroxide.

It is a fluffy, white, crystalline powder, the crystals being small irregular plates. It dissolves in 30 parts of water at ordinary temperature. It is moderately soluble in alcohol, acetone, and ethyl acetate, sparingly soluble in ether, insoluble in benzene, chloroform and ligroin. Odorless or nearly so; softens at 115° C. (239° F.) and melts at 127° C. (262° F.) with decomposition. When brought into a flame it explodes, but it does not explode on percussion or friction. It deteriorates slightly on continued exposure to air, but if kept tightly stoppered and in a dark place it remains unchanged indefinitely.

It is a powerful oxidizing agent, liberating iodine from potassium iodide. It can be identified by its physical properties and its powerful oxidizing action. To test its strength add 2 Gm. of potassium iodide to 1 Gm. of alphozone dissolved in 60 Cc. of distilled water. To this slowly add decinormal solution of sodium thiosulphate with constant agitation until the red brown color of the iodine is just discharged. Each cubic centimeter of sodium thiosulphate solution is equivalent to 0.0117 Gm. of alphozone; 1 Gm. of pure alphozone is equivalent to 85.41 Cc. decinormal sodium thiosulphate solution.

Actions and Uses.—Alphozone belongs to the class of organic peroxides, and by virtue of its oxidizing power is germicide and antiseptic. Alphozone also possesses deodorant and bleaching properties. The fact that it does not effervesce with pus nor in contact with the living tissues is claimed as an advantage over hydrogen dioxide.

Alphozone is employed both externally and internally. It is said to be useful for disinfecting the hands and such instruments as are not attacked by oxidizing agents. It is used for the disinfection of the field of operation and has been employed for its germicidal effect with asserted good results in local infections in which the substance can be brought in contact with the diseased surface, such as ulcers, abscesses, inflammation of mucous membranes, and infectious skin diseases. Internally it has been used in typhoid fever and as an intestinal antiseptic.

Dosage.—Alphozone is employed in solutions containing 1 part per 1,000 for general external use. As a nasal douche a proportion of 1 to 3,000 is often preferred.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. patents Nos. 768,561 and 768,563 (Aug. 23, 1904; expires 1921). U. S. trademark No. 41,981.

Alphozone Tablets, 1 grain. Each tablet contains alphozone 0.065 gm. (1 grain). One tablet to 60 Cc. (2 fluidounces) of water gives a solution of 1 to 1,000.

ALUMNOL—Alumini Naphtholsulphonas.—Aluminum Betanaphthol-Disulphonate.—Alumnol, $Al_2(C_{10}H_5.OH.(SO_3)_2)_3 = Al_2C_{30}H_{18}O_{21}S_6$, is aluminum betanaphthol-disulphonate, the aluminum salt of betanaphthol-disulphonic acid.

It is prepared by mixing solutions of barium naphthol-disulphonate and aluminum sulphate in molecular proportions, filtering off the barium sulphate, and evaporating the filtrate to dryness.

It forms a fine, nearly white, non-hygroscopic powder, soluble in 1.5 parts of water, forming a faintly acid and slightly fluorescent solution.

It is also easily soluble in glycerin, but sparingly soluble in alcohol and insoluble in either. When dried it loses about 9 per cent. of water, and when exposed to the air it is darkened in consequence of its reducing properties. It is precipitated from solution by albuminous and gelatinous bodies, but these precipitates are redissolved in excess of the latter bodies.

The aqueous solution (1-10) should be clear, and after acidulation with hydrochloric acid should become at most only slightly turbid, and only just tinted bluish by potassium ferrocyanide; nor should precipitates be produced in it on the addition of diluted sulphuric acid or solution of ammonium oxalate. The dried compound should yield 12.7 per cent. of ash (alumina) on incineration.

It should not be exposed to the air, and is incompatible with salts of silver, or other reducible salts.

Actions and Uses.—It is an astringent and mild antiseptic. It is claimed that it can be used as a mild astringent, an irritant or a caustic, according to the strength of the solution, and it is asserted that it exerts a peculiarly destructive action on gonococci. It has been recommended for a variety of affections in which a caustic, astringent or antiseptic is indicated. It has been particularly recommended for gonorrhea in females, especially when affecting the endometrium.

Dosage.—As a surgical antiseptic, in 0.5 to 3 per cent. solutions; in gynecology, in 2 to 5 per cent. solutions; in otology and laryngology, either as a powder or in ¼ to 1 per cent. solution as douches, washes or gargles; as cautery, in 10 to 20 per cent. solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). German patent No. 74,209.

ALYPIN.—Alypin is 2-benzoxy-2-dimethyl-amino-methyl-1-dimethyl-amino-butane hydrochloride, $CH_3.CH_2.C(C_6H_5COO)(CH_2N(CH_3)_2).CH_2N(CH_3)_2.HCl = C_{16}H_{26}O_2N_2.HCl$. It is closely related to Stovaine (which see).

By the action of dichloracetone, $CH_2Cl.CO.CH_2Cl$, on ethylmagnesium bromide dissolved in ether and decomposition by water of the magnesium compound formed, ethyl-dichlorhydrin, $CH_2Cl.C(C_2H_5)(OH).CH_2Cl$, is obtained. From this, by the action of dimethylamine, ethyl-tetramethyl-diamino-propanol is produced. This product is treated with benzoyl chloride and the benzoyl-ethyl-tetramethyl-diamino-propanol neutralized with hydrochloric acid to form the chloride.

Alypin is a white, crystalline powder, melting at 169° C. (336.2° F.), hygroscopic and extremely soluble in water. Its solutions are neutral and are not rendered turbid on addition of sodium bicarbonate in moderate quantities, and may be sterilized by boiling for a period not exceeding five minutes, without decomposition. It is easily soluble in alcohol. It has a markedly bitter taste.

It should be protected from the air in well-stoppered containers. Two and four per cent. solutions are quite stable, but weaker solutions are likely to become mouldy.

Addition of potassium iodide test solution to the aqueous solution (1-100) produces a white precipitate; potassium dichromate test solution produces a yellow crystalline precipitate soluble in hydrochloric acid; potassium permanganate test solution produces a violet crystalline precipitate, which turns brown on standing. If 0.1 Gm. Alypin be mixed with 1 Cc. sulphuric acid and warmed to 100° C. (212° F.) for five minutes and then 2 Cc. water carefully added, the odor of benzoic-ethyl-ester is developed; on cooling crystals separate out, which are dissolved on adding 2 Cc. alcohol. If Alypin is dried at 100° C. (212° F.) the loss should not exceed 1.5 per cent.

Actions and Uses.—It is a local anesthetic, claimed to be equal to cocaine, but not a mydriatic; it is said not to produce disturbance of accommodation and to be less toxic than cocaine.

Dosage.—Externally in the form of a 10 per cent. solution hypodermically in 1 to 4 per cent. solutions; for the eye in 1 to 2 per cent. solutions. As much as 5 Cc. of a 3 per cent. solution was well tolerated in one case.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 808,748 (Jan. 2, 1906; expires 1923). U. S. trademark No. 44,608

Alypin Tablets, 3 1/3 grains. Each tablet contains 0.22 Gm. (3⅓ grains) of alypin.

Alypin Tablets, 1 1/8 grains. Each tablet contains 0.073 Gm. (1⅛ grains) of alypin.

Alypin Tablets, 3/4 grain. Each tablet contains 0.048 Gm. (¾ grain) of alypin.

Alypin Tablets, 1/3 grain. Each tablet contains 0.022 Gm. (⅓ grain) of alypin.

AMMONIUM HYPOPHOSPHITE—Ammonii Hypophosphis.—Ammonium hypophosphite, $NH_4H_2PO_2$, is the ammonium salt of hypophosphorous acid.

Ammonium hypophosphite may be prepared by double decomposition between aqueous solutions of barium hypophosphite and ammonium sulphate. The liquid filtered from the precipitate is evaporated to dryness and the ammonium hypophosphite extracted from the residue with hot alcohol.

Ammonium hypophosphite occurs in irregular hexagonal plates which melt without decomposition and at a higher temperature give off water and spontaneously inflammable hydrogen phosphide. According to H. Rose, ammonia, NH_3 escapes first. The compound is less soluble in water than the potassium salt, but is very soluble in absolute alcohol.

The aqueous solution should be neutral or slightly acid to litmus paper, and on gently heating with potassium hydroxide test solution evolves ammonia. The diluted aqueous solution slightly acidulated with dilated sulphuric acid, yields, with silver nitrate test solution, a brown precipitate, which rapidly turns black, owing to the separation of metallic silver. With copper sulphate test solution, after addition of dilute acid and on gentle heating, a reddish brown precipitate is formed. When the aqueous solution of the salt (1 in 20), acidulated with hydrochloric acid, is added, drop by drop, to an excess of mercuric chloride test solution, a white precipitate of mercurious chloride is formed. On further addition of the hypophosphite solution in excess, the precipitate becomes gray from reduction to metallic mercury.

The solution in water should give not more than a faint turbidity on the addition of barium chloride test solution nor on the addition of diluted sulphuric acid. A solution of 1 Gm. ammonium, hypophosphite in 10 Cc. water should not be alkaline toward phenolphthalein test solution; to render this solution alkaline should not require more than 0.4 Cc. normal potassium hydroxide. The aqueous solution of the salt (1 in 20), acidulated with hydrochloric acid, should not respond to the U. S. P. Time-limit Test for heavy metals. If 5 Cc. of the aqueous solution of the salt (1 in 10) be measured into a beaker containing 3 Cc. of nitric acid, diluted with about 10 Cc. of water and evaporated to dryness on a water bath, the residue should not respond to the U. S. P. Modified Gutzeit's Test for arsenic.

Action and Uses.—Ammonium hypophosphite exhibits the actions of its constituents. There are differences of opinion as to whether these constituents have action other than that on the digestive tract. It is used as a stimulating expectorant and "alterative," in diseases of the respiratory mucosæ, particularly in the later stages of acute bronchitis and laryngitis, and in chronic catarrhal conditions.

Dosage.—0.13 Gm. (2 grains) every 2 or 3 hours.

Proprietary Preparation:

GARDNER'S SYRUP OF CHEMICALLY PURE HYPOPHOSPHITE OF AMMONIUM.—Syrupus Ammonii Hypophosphitis (Gardner).—A syrup containing 3.33 Gm. ammonium hypophosphite in each 100 Cc. (16 grains in each fluidounce).

Action, Uses and Dosage.—See ammonium hypophosphite.

Manufactured by R. W. Gardner, New York City.

AMYL VALERATE — Amylis valeras. — Amyl valerate, $CH_3.CH(CH_3).CH_2.COO(CH_2.CH(CH_3).CH_2.CH_2) = C_{10}H_{20}O_2$, is the iso-valeric acid ester of iso-amyl alcohol.

Amyl valerate is obtained by separating (by distillation) the ester which is formed when valeric acid or solution of a valerate is added to a mixture of iso-amyl alcohol and sulphuric acid and the distillate obtained, washed, dried and redistilled.

Amyl valerate is a colorless liquid, having when dilute an odor of apples. It is insoluble in water, soluble in alcohol, ether and chloroform. It boils at 188-190° C. (370.4-374° F.). Its specific gravity is .858 at 15° C.

Action and Uses.—Amyl valerate has been employed in the treatment of gallstone colic. Its employment in renal colic is not satisfactory.

Dosage.—To relieve biliary colic, 0.2 to 0.04 Cc. (3 to 6 minims) in capsules every half hour; or 1 Cc. (15 minims) in capsules, three times daily.

ANTHRASOL—Colorless Coal Tar.—Anthrasol is coal tar, freed from pitch, pyridin bases and coloring matter, and mixed with juniper tar.

Coal tar is freed from bases, such as pyridin and chinolin by treatment with acids and from pitch by distillation. The distillate, containing the hydrocarbons and phenols of tar is purified to remove constituents causing discoloration. To prevent separation of solid constituents juniper tar is added, and oil of peppermint to correct the odor. It is a thin, mobile, light-yellow oil which does not stain either skin or linen.

Actions and Uses.—Antrasol is antiseptic, parasiticide, keratoplastic, anti-pruriginous; like ordinary tar, it allays irritation of the skin, but is claimed not to obstruct the follicles nor to favor the development of acne.

It is said to be useful in chronic or subacute skin diseases, various forms of eczema, especially for after-treatment, and for all pruriginous affections; in diseases of the hair, as a restorative and for the removal of dandruff.

Dosage.—Locally in the form of a 5 to 10 per cent. petrolatum ointment in eczema; 10 per cent. ointment with glycerite of starch and 10 per cent. of wool fat (adeps lanæ) in pruritus; 20 to 30 per cent. ointment or paste, in lichen; in combination with sulphur and soft soap, in parasitic *skin affections.*

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. U. S. trademark No. 40,634.

ANTIFORMIN. Antiformin is a strongly alkaline solution of sodium hypochlorite. In each 100 c.c. it contains approximately sodium hypochlorite equivalent to 5.68 gm. available chlorine, sodium hydroxide 7.8 gm., and sodium carbonate 0.32 gm.

According to the patent specification chlorinated lime is dissolved in water at the temperature of 35° C. To this a solution of sodium carbonate is added. After standing the supernatant liquid is decanted and to this sodium hydroxide is added.

Antiformin is a yellowish, clear liquid having the peculiar odor characteristic of hypochlorites.

The per cent. of available chlorine, of alkali hydroxide and carbonate may be determined by the methods described in the Reports of the Chemical Laboratory of the American Medical Association, 1911.

Actions and Uses.—Antiformin rapidly dissolves the bodies of bacteria with the exception of acid-fast organisms like the tubercle bacillus, on which it has no solvent action and which resists its germicidal action to a great extent. It dissolves other organic matters, such as those contained in sputum and feces. It exerts a strong oxidizing action and is disinfectant, antiseptic and deodorizing. It is said to be more than three times as active in germicidal action as phenol.

Based upon its property of dissolving most bacteria and the insoluble constituents of the sputum, Antiformin is employed in testing for tubercle bacilli. It is said to be useful for the sterilization of the surgeon's hands, of instruments and of wounds and for general purposes of disinfection. It is also said to be useful in certain skin diseases.

Dosage.—Externally in from 2 to 10 per cent. solution. In from 4 to 1,000 solution as a spray. As a disinfectant 5 per cent. solutions are used. For the demonstration of tubercle bacilli 15 per cent. solutions are suitable.

Manufactured by the American Antiformin Co., New York. U. S. patent No. 691,671 (Jan. 21, 1902; expires 1919). A process for Cleaning Beer Vats and Pipes, said process consisting according to the patent specifications "in subjecting the walls of said vats or pipes to the action of a solution composed of about 1 part of alkaline hypochlorite with about a half to one part of alkaline hydrate, substantially as specified." U. S. trademark No. 61,693.

ANTIPYRINE SALTS

Antipyrine, phenyldimethylpyrazolon, is a weak base which unites with acids to form unstable salts that hydrolyze readily when dissolved in water separating into their components. The therapeutic activity of these compounds represents a combination of the actions of the acid and the base.

ANTIPYRINE SALICYLATE—Antipyrinæ Salicylas.—Antipyrine salicylate, $C_{11}H_{12}N_2O.C_6H_4OH.COOH = C_{18}H_{18}N_2O_4$, is a weak chemical combination of antipyrine and salicylic acid.

It is prepared by heating antipyrine and salicylic acid, in molecular proportions, on the water bath, allowing the oily product to congeal by cooling, and crystallizing it from alcohol.

It occurs as a white, coarsely, crystalline powder, or in hexagonal tabular crystals, melting at 91° to 92° C. (195.8° to 197.6° F.); odorless, slightly sweet; soluble in 200 parts of cold and 40 parts of boiling water; readily soluble in alcohol, less readily in ether. It is decomposed by acids with the elimination of salicylic acid, and by alkalies with the elimination of antipyrine.

Its aqueous solution is rendered milky by tannic acid, then colored green by the addition of a few drops of fuming nitric acid. It is colored deep red by ferric chloride, passing to violet-red on copious dilution with water. It must not be affected by hydrogen sulphide.

It is incompatible with acids, alkalies and tannins.

If 1 Gm. antipyrine salicylate is weighed in a separator, treated with 25 Cc. water and 10 Cc. sodium hydroxide test solution, and the liquid then extracted with chloroform, the latter on evaporation should yield a residue which when dry should weigh 0.57-0.58 Gm., melt at 113 degrees and respond to the tests for antipyrine.

The solution remaining in the separator, acidified, and extracted with chloroform, the chloroform allowed to evaporate, should yield a residue of white needle-like crystals, which when dry melt at 155°-156° and respond to the tests for salicylic acid.

If 1 Gm. antipyrine salicylate is dissolved in 50 Cc. diluted alcohol, a few drops of phenolphthalein added, from 30.5-30.8 Cc. tenth normal alkali should be required to produce a permanent pink color, indicating a salicylic acid content of 42.10-42.50 per cent.

Dosage.—For hypodermic injection 0.1 Gm. (1½ grains) to 0.5 Gm. (7½ grains). For internal administration 0.05 Gm. (¾ grain) 3 to 4 times daily.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.) U. S. trademark No. 75,046.

SODIUM ARSANILATE—Sodii Arsanilas.—Sodium Aniline Arsonate. Sodium Aminophenyl Arsonate. Sodium arsanilate, $C_6H_4(NH_2)$ (AsO.OH.ONa) $= C_6H_7O_3NAsNa$, is the sodium salt of arsanilic acid, $C_6H_4(NH_2)$ (AsO.(OH)$_2$),1:4.

It is prepared by condensing aniline and arsenic acid, eliminating water and isolating the arsanilic acids. The sodium salt is prepared by the usual methods.

Sodium arsanilate occurs as white, odorless crystals soluble in (5 or 6 parts) of water and is more soluble in warm water. It has a faint salty taste. On standing, the aqueous solution assumes a yellowish tint.

Sodium arsanilate crystallizes with somewhat varying amounts of water of crystallization. The arsenic content varies in different preparations from 23 to 26 per cent.

An acid solution of sodium arsanilate is not affected by hydrogen sulphide in the cold; when the solution is warmed the arsenic may be completely precipitated by hydrogen sulphide. If a solution of sodium arsanilate is treated with hydrochloric acid and potassium iodide, iodine is set free. The resulting liquid, whether freed of iodine or not, gives, even in the cold, a precipitate of arsenic sulphide when treated with hydrogen sulphide.

The arsenic and water content of sodium arsanilate may be determined by the methods given in THE JOURNAL A. M. A., Sept. 21, 1907, p. 1041.

An aqueous solution of the salt gives with mineral acids a white precipitate of arsanilic acid, soluble in excess of acid. An aqueous solution of the salt gives with silver nitrate solution a white precipitate of silver arsanilate. An aqueous solution of the salt, after the addition of hydrochloric acid and sodium nitrate gives a deep red coloration with a solution of β-naphthol in caustic soda.

Actions and Uses.—The arsenic of the arsanilic acid is liberated very slowly in the system, thus producing the ordinary therapeutic effects of arsenic, with a more continuous and less toxic action and less irritation. Toxic effects from excessive doses have been frequently noted, although the toxicity of sodium arsanilate is stated to be about 1/40 of that of arsenic trioxide. The poisonous effects appear to be due largely to the arsenic component, the aniline taking no part in them. It is claimed that the use of sodium arsanilate is not followed by irritation, abscess formation, etc., which sometimes follow the use of other preparations of arsenic. The use of sodium arsanilate in large doses has occasionally been followed by degeneration of the optic nerve, leading to blindness.

Sodium arsanilate has been recommended for the conditions which are favorably influenced by arsenic, such as anemia, nervous affections and diseases of the skin. It is said to have been very successful as a remedy for trypanosomiasis, both of animals and of man, and is also said to be useful in other protozoal diseases, such as syphilis, malaria, kala-azar, etc.

Dosage.—0.02 to 0.2 Gm. (⅓ to 3 grains) hypodermically every other day, gradually increasing, if necessary, until the single dose reaches 0.65 Gm. (10 grains) and until a total of 6.5 Gm. (100 grains) have been given. The drug should not be given by the mouth, as it is decomposed by the acid contents of the stomach, and toxic symptoms may result.

Proprietary preparations:

Sodium arsanilate was first introduced in the form of *Atoxyl.*

ATOXYL.—Atoxyl is sodium arsanilate containing about 26 per cent. of arsenic and corresponding closely to the formula $C_6H_4(NH_2)$. (AsO.OH.ONa)$+3\ H_2O$. It is a white powder having the properties given above.

Manufactured by Vereinigte Chemische Werke Actiengesellschaft, Charlottenburg, Germany. (Victor Koechl & Co., New York.) U. S. trademark No. 38,879.

Atoxyl Hypodermic Tablets, 1/3 grain.—Each tablet contains atoxyl 0.02 Gm. (⅓ grain).

SOAMIN.—Soamin is a form of sodium arsanilate containing approximately 22 per cent. of arsenic and corresponding to the formula $C_6H_4(NH_2)$. (AsO.OH.ONa)$+5\ H_2O$. It is a white crystalline substance having the properties given above.

Manufactured by Burroughs, Wellcome & Co., London, Eng., and New York. British trademark No. 302,133; U. S. trademark applied for.

Tabloid Soamin, 5 grains.—Each tablet contains soamin 0.3 Gm. (5 grains).

Tabloid Soamin, 1 grain.—Each tablet contains soamin 0.065 Gm. (1 grain).

ARSENOFERRATIN—Sodii Arsenoferrialbuminas.—Sodium Arsenoferrialbuminate.—Arsenoferratin is an arsenic iron albumin compound, obtained by introducing the element arsenic into the molecule of ferrialbuminic acid. Arsenoferratin contains iron in the ferric state, in organic combination equivalent to 6 per cent. metallic iron and arsenic, equivalent to 0.06 per cent. elementary arsenic.

Arsenoferratin is a brown, almost odorless and tasteless powder. It is soluble in water and easily soluble in dilute alkaline solutions.

Actions and Uses.—Arsenoferratin has the pharmacologic action of organic compounds of iron and of arsenic.

Dosage.—0.5 Gm. (7½ grains) three to four times daily.

Manufactured by C. F. Boehringer & Soehne, Waldhof, Mannheim, Germany. (Merck & Co., New York). Not patented. U. S trademark No. 24,228.

Arsenoferratin Tablets.—Each tablet contains arsenoferratin 0.25 Gm. (4 grains).

Arsenoferratose.—Liquor Ferratini Arsenati.—Arsenoferratose is a 5 per cent. solution of arsenoferratin.

Arsenoferratin, 5 parts, is dissolved with the aid of a small quantity of sodium hydroxide in water, 68 parts, glycerin, 20 parts, alcohol, 6 parts, and Angostura essence, 1 part.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) three to four times daily.

For the determination of Iron and Arsenic in Arsenoferratose, the following methods are furnished:

Twenty-five Cc. of arsenoferratose are evaporated to a viscid consistency in a capacious tared crucible and the residue heated in a drying oven at 100 degrees C. for three hours to constant weight. After the crucible and its contents have been allowed to cool in a desiccator, it is weighed. The weight of the evaporated residue multiplied by 4 should be about 23. The weighed residue is now carefully incinerated, and finally ignited. After it has cooled, it is moistened with nitric acid, and again ignited, and finally taken up with 10 Cc. hydrochloric acid. The solution is diluted with 30 Cc. water, and when cold, 3 Gm. potassium iodide are added and the mixture allowed to stand for an hour in a well-stoppered bottle at the ordinary temperature. It is then titrated with decinormal sodium thiosulphate solution. The iodine liberated should require about 12.5 Cc. of tenth normal thiosulphate solution.

Fifty Cc. of the arsenoferratose contained in a distillation flask ated to about one-third of its original volume. To the residue are of about 500 Cc. capacity, are heated on a water bath and evapor- now added 80 Cc. of arsenic-free concentrated hydrochloric acid and 20 Cc. arsenic-free, 25 per cent. solution of ferrous chloride, and the arsenic chloride distilled over, the receiver being kept well cooled by means of cold water. The contents of the receiver are then supersaturated with sodium bicarbonate, and the arsenic then titrated with the tenth-normal iodine solution: 0.4 Cc. decinormal iodine solution should be required, corresponding to a content of 0.003 Gm. in 100 Cc. arsenoferratose.

ARSEN-TRIFERRIN—Arsentriferrinum.—Arsen-Triferrin is an iron aresnoparanucleate containing arsenic in organic combination and standardized to contain a definite amount of arsenic by diluting with iron paranucleate. It should contain about 16 per cent. of iron, 0.1 per cent. of arsenic (As.), and 2.5 per cent of phosphorus, all in organic combination.

Arsen-Triferrin is an orange colored, tasteless powder, soluble in dilute alkalies from which it can be precipitated by the addition of an acid. It is also soluble in about 8 per cent. of hydrochloric acid on warming.

The determination of the amount of iron, arsenic and phosphorus in arsentriferrin is carried out according to the method in "Prüfungsvorschriften für die pharmazeutischen Spezialpräparate." (Knoll & Co.)

Actions and Uses.—Arsen-Triferrin passes through the stomach unchanged and undissolved, but is dissolved in the intestines and absorbed. This behavior prevents injurious action of arsenic on the gastric mucous membrane.

Arsen-Triferrin is said to be useful in cases of anemia which are rebellious to iron alone, and in neurasthenia, hysteria, and in skin diseases.

Dosage.—5 grains three times a day after meals.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany and New York (Merck & Co., New York). U. S. trademark No. 36,747.

Arsen-Triferrin Tablets, 5 grains.—Each tablet is said to contain arsen-triferrin 0.3 Gm. (5 grains).

Arsen-Triferrol. Elixir Arsen-Triferrini. Arsen-Triferrol is an elixir of arsen-triferrin containing in each 4 Cc. (1 fluidram) about 0.06 Gm. (1 grain) of arsen-triferrin in a menstruum containing 15 per cent of alcohol. It is prepared by dissolving a soluble form of arsen-triferrin in a vehicle consisting of water, alcohol, tincture of orange, compound tincture of cardamom and vanillin.

ASPIRIN.—Acidum Acetylsalicylicum.—Acetylsalicylic Acid. Acidum Acetylosalicylicum (Pharm. Helvetica, edit. 4; Pharm. Danica, 1907; Pharm. Svecica, edit. 9; Pharm. Hungarica, edit. 3)—Acidum Acetylsalicylicum (Pharm. Française, 1908)—Acetylsalicylic acid, $C_6H_4.((CH_3CO).COOH,1{:}2 = C_9H_8O_4$, is the acetyl derivative of salicylic acid.

It is prepared by the prolonged heating of 50 parts of salicylic acid and 75 parts of acetic anhydride at about 150° C. (302° F.)

under a reflux condenser, and subsequent purification, by recrystallization from chloroform.

It forms small, colorless, crystalline needles, melting at 135° C. (275° F.), odorless and having an acidulous taste. It is soluble in 100 parts of water and freely soluble in alcohol or ether. It is readily split up on boiling with water or with alkalies with the production of acetic acid and salicylic acid or a salicylate.

It forms clear, colorless solutions, which do not develop a violet color on the addition of ferric chloride unless previously hydrolysed by boiling with sodium hydroxide. It gives no reaction with silver nitrate, and should leave no residue when heated on platinum foil.

It is incompatible with heat, moisture, alkalies, their carbonates and bicarbonates. It keeps well when properly protected.

Actions and Uses.—It acts like salicylic acid, over which it possesses the advantage of producing less of the undesired local and systemic side effects, on account of the slow liberation of the salicylic acid. It is claimed to pass the stomach unchanged, the decomposition beginning in the intestine.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in capsules or wafers, or dissolved in sweetened water, or dry on the tongue, followed by a swallow of water. The powder should be dispensed in wax paper.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 644,077 (Feb. 27, 1900; expires 1917). U. S. trademark No. 32,805.

BARIUM CHLORIDE—Barii Chloridum.—Baryum Chloratum (Pharm. Germanica, edit. 4; Pharm Helvetica, edit. 4). Barium Chloride ($BaCl_2 2H_2O$) is the barium salt of hydrochloric acid.

Barium chloride occurs as colorless trimetric plates or glistening scales, odorless, non-efflorescent and having an unpleasant, bitter, sharp, saline taste. It dissolves in 2.5 parts cold and in 1.5 parts boiling water, forming a neutral solution; but is insoluble in alcohol. Barium chloride becomes anhydrous when dried at 120° C. (248° F.).

An aqueous solution of the salt yields, with diluted sulphuric acid, a heavy white precipitate, insoluble in strong acids, and with silver nitrate a curdy, white precipitate, insoluble in nitric acid but readily soluble in ammonia water. Diluted alcohol, after remaining in contact with the salt for several hours, should, on ignition, give a pure yellowish-green flame free from red (absence of traces of strontium). An aqueous solution of barium chloride should not be precipitated by ammonium sulphide nor should any residue remain after adding excess of diluted sulphuric acid to the solution, filtering, and evaporating to dryness. Twenty Cc. of the aqueous solution (1 to 20) must not turn blue on the addition of 0.5 Cc. of potassium ferrocyanide T. S.

Action and Uses.—Barium chloride is a toxic substance, its most striking effects being exerted upon muscle tissue, especially unstriped and heart muscle. In large doses it affects the spinal cord and medulla. By actively stimulating peristalsis, through action on the muscle wall, and by its direct irritant action, it readily produces vomiting and purging. It strengthens the cardiac contraction by direct action on the heart muscle, and by this means and still more by direct action on the vessel walls it greatly increases blood pressure, acting like digitalis. It acts on the muscles like veratrin. It first greatly excites and then paralyzes the spinal cord and medulla. Given in very dilute solution, absorption is small and the barium is deposited in the bones. Injected intravenously it causes tonic and clonic spasms, because of stimulation of the spinal cord and medulla.

In fatal doses it causes hemorrhages into the stomach, intestines and kidneys.

Its clinical use has been attended with little success, chiefly because of the gastrointestinal irritation and high toxicity. It has, however, been used in cardiac disease with insufficient blood pressure, as a general "tonic," and with less reason in tremors, in scleroses of the central nervous system, internally and locally in varicose veins, etc.

In poisoning the most direct antidote against the portion remaining in the gastrointestinal tract is sodium sulphate, which produces insoluble barium sulphate.

Its use is attended with considerable danger.

Dosage.—0.006 to 0.003 Gm. (1/10 to ½ grain) or 2 to 4 Cc. (30 to 60 minims) of a 1 per cent. solution (5 grains to the fluidounce). Fatal, 0.80 to 0.90 Gm. (13-15 grains). It should always be well diluted before giving.

Internally used in syphilis, scrofula and tumor albus in doses of 0.03-0.10 Gm. (½ to 1½ grains) 3 to 4 times per day; for heart disturbances 0.2-0.4 Gm. (3 to 6 grains) per day. Maximum dose per day 0.6 Gm. (9 grains). Externally employed as an eye-wash in scrofulous eye affections in 10 per cent. solution.

BENZOSALIN. — Methylis Benzoyl-Salicylas.—Benzoyl-Salicylic-Acid-Methylester—Methyl Benzoyl-Salicylate. Benzosalin is methyl benzoyl salicylate $C_6H_4.O(CH_3).COO(C_6H_5CO)$, $1{:}2 = C_{15}H_{12}O_4$ the benzoyl salicylic acid ester of methyl alcohol.

Benzosalin is prepared by a reaction between the methylester of salicylic acid and benzoyl chloride in the presence of sodium hydroxide. The resulting product is washed with water and after drying is crystallized out from alcohol.

Benzosalin consists of fine, white crystals with a very faint aromatic odor. It melts at about 85° C. (185° F.). It burns leaving no residue. It dissolves readily in chloroform, benzene and in 35 parts of 90 per cent. cold alcohol, also in pure concentrated sulphuric acid.

Actions and Uses.—Benzosalin is said to pass the stomach unchanged and to be decomposed into its constituents, benzoic and salicylic acids in the intestines. It is said to be free from the undesirable by-effects of salicylic acid. It is claimed that benzosalin is an intestinal antiseptic.

Benzosalin is said to be useful in rheumatic affections, such as arthritis, neuralgia, sciatica and migraine, and in arthritis deformans.

Dosage.—0.5 to 1 Gm. (7½ to 15 grains). Daily dose 3 to 4 Gm. (45 to 60 grains) in powder or tablets.

Manufactured by F. Hoffmann-La Roche & Co., Basel, Switzerland. (The Hoffmann-La Roche Chemical Works, New York.) U. S. Patent No. 799,706 (Sept. 19, 1905; expires 1922). Controlling Benzoyl Salicylic Acid. Name "Benzosalin" registered No. 58,757.

Benzosalin Tablets, 5 grains.—Each tablet contains benzosalin 0.3 Gm. (5 grains).

BERBERINE HYDROCHLORIDE. — Berberinæ Hydrochloridum.—Berberine hydrochloride is the hydrochloride, $C_{20}H_{17}NO_4HCl + 2H_2O$, of an alkaloid obtained from *Hydrastis canadensis* and *Berberis vulgaris.*

Berberine hydrochloride occurs as bright yellow acicular crystals of amorphous powder, slightly soluble in alcohol *to which it imparts a deep yellow color.* It is soluble in 300 parts cold water, but dissolves more easily in hot water.

An aqueous solution of berberine or its salts treated with chlorine or bromine water produces a blood red color. Bromine water in excess precipitates the reddish-brown berberine tetra-
[illegible]
onverted by
yellow-brown

Ammonium sulphide precipitates from an alcoholic solution of berberine sulphate the polysulphide $(C_{20}H_{17}NO_4)_2H_2S_5$ which crystallizes in brown-black needles.

Berberine solutions even if very dilute when treated with potassium iodide solution yield a yellow precipitate of berberine hydroiodide.

Action and Uses.—Given by mouth, it acts as a bitter stomachic. Very large doses, although not fatal, cause diarrhea, tremors, general weakness, low blood pressure (from depression of vasomotor center and of cardiac muscle), rapid pulse (depression of vagus endings) and respiration. Recovery is slow. Nephritis may be present. Subcutaneous injection kills by paralysis of respiration, with symptoms of asphyxia and paralysis. It has been used as a bitter tonic for diarrhea, the vomiting of pregnancy and as a febrifuge.

Dosage.—0.06 Gm. to 0.3 Gm. (1 to 5 grains). As much as 20 grains have been taken without obvious effect other than a loose stool.

BETANAPHTHOL BENZOATE—Naptholis Benzoas.—Benzonaphthol. Benzoyl-Beta-Naphthol.—Beta-naphthol benzoate is beta-naphthyl benzoate, $C_6H_5.COO.C_{10}H_7 = C_{17}H_{12}O_2$, the benzoic ester of beta-naphthol.

Beta-naphthol benzoate is obtained by heating beta-naphthol and benzoyl chloride together at 170° C. (338° F.), extracting the product with alcohol, and crystallizing.

It forms colorless needles, or a white crystalline powder, colorless and tasteless, melting at 107-110° C. (224.6-230° F.). It is almost insoluble in water, but readily soluble in alcohol and in ether; also soluble in chloroform, in glycerin and in olive oil.

It is decomposed by heating with *caustic alkalies* into naphthol and a benzoate which will then give their characteristic reactions.

To test beta-naphthol benzoate for the presence of beta-naphthol it should be shaken several times with dilute solution of sodium hydroxide (1:10) and immediately filtered. If beta-naphthol is present in considerable amount it will separate as a turbidity or precipitate after acidifying with dilute sulphuric acid. If the amount of beta-naphthol is small no precipitate appears, but the alkaline solution shows a bluish fluorescence and if it is boiled with chloroform a green color is produced.

A solution of beta-naphthol benzoate should not give a violet color with chloride of lime or solution of iodine and alkali.

It is incompatible with *antipyrine*, camphor, phenol, ferric chloride, menthol, potassium permanganate, or ethyl carbamate (urethane).

If 1 Gm. beta-naphthol benzoate be shaken with 10 Cc. water and the solution filtered, the filtrate acidified with nitric acid, should not become turbid on addition of silver nitrate solution.

Beta-naphthol benzoate heated on a platinum foil should leave no weighable residue.

Actions and Uses.—Beta-naphthol benzoate is split up into its constituents on reaching the intestinal tract and is believed to act as an antiseptic. It is said to be diuretic. It is used internally as an intestinal antiseptic in diarrhea and typhoid fever. Externally it is said to be useful as a parasiticide in the form of 3 to 10 per cent. ointment, and has been used in psoriasis, eczema, scabies, etc.

Note: Wide difference of opinion exists among authorities as to the actual efficiency of any intestinal antiseptics and most urinary antiseptics. Whatever opinion regarding this is followed, it should be remembered that if used freely or for a long time any of them may have irritating effects upon the digestive tract or undesirable effects upon other tissues. Reasonable caution should therefore be exercised in using them.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains); maximum dose, single, 1 Gm. (15 grains), daily 4 Gm. (60 grains).

Non-proprietary preparations:

Beta-naphthol Benzoate, Heyden. Manufactured by Fabrik von Heyden, Radebeul near Dresden, Germany (Merck & Co., New York). Not patented or trademarked.

Benzonaphthol, Farbwerke. Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). Not patented or trademarked.

BETOL—Naphtholis Salicylas.—Naphthalol—Naphthol-Salol—Salinaphthol.—Betol is beta-naphthyl salicylate, $C_6H_4.OH.COO(C_{10}H_7) = C_{17}H_{12}O_3$, the salicylic acid ester of beta-naphthol.

Betol is obtained by heating beta-naphthol-sodium and sodium salicylate with phosphorus oxychloride at 120°-130° C. (248° to 266° F.).

It is a white, shining crystalline powder, colorless and tasteless melting at 95° C. (203° F.). It is insoluble in cold or hot water or glycerin, difficultly soluble in cold alcohol or turpentine, easily soluble in boiling alcohol, in ether, in benzene, and in warm linseed oil. In the cold it is not changed by acids or alkalies of moderate concentration. When heated with alkalies it is decomposed into its constituents, which, if the solution is acidulated, will crystallize.

It is distinguished from salol by its higher melting point and by the production of a brownish-green color, when a trace of nitric acid is added to its yellow colored solution in pure sulphuric acid. It burns on platinum foil, leaving no residue (absence of fixed mineral impurities).

If 1 Gm. of betol is shaken with 30 Gm. of boiling water and filtered through a moistened filter, the filtrate should not have an acid reaction (absence of salicylic, hydrochloric or phosphoric acid) nor should it after cooling show a crystalline deposit (salicylic acid or beta-naphthol) and should not become turbid on the addition of silver nitrate (chlorides or phosphates) or barium nitrate (absence of sulphate) nor should it give a violet color with solution of ferric chloride.

Actions and Uses.—Betol undergoes no change in the stomach, but is split up into its original compounds when it reaches the intestinal tract by the pancreatic juice and intestinal secretions. It is believed to act as an intestinal antiseptic and, being excreted in the urine, to act in a similar way in the bladder. (See note under Beta-Naphthol Benzoate.)

It has the antirheumatic properties of salicylic acid. It is said to be useful for intestinal fermentations, catarrh of the bladder, particularly in gonorrheal cystitis, for rheumatism, etc.

Dosage.—0.3 to 0.5 Gm. (4 to 8 grains) in cachets, milk or emulsion.

Manufactured by the Heyden Chemical Works, New York. U. S. trademark.

BILE SALTS

The bile of man and of several animals contains in varying proportions the sodium salts of conjugated cholic acids; in ox and human bile especially glycocholic acid $C_{26}H_{43}O_6N$; and taurocholic acid, $C_{26}H_{45}O_7NS$. Fresh ox gall is said to contain about 3 per cent. each of sodium glycocholate and sodium taurocholate.

The sodium glycocholate and taurocholate may be separated in the following manner: Dry ox bile is treated with absolute alcohol and the tincture precipitated by ether in excess. Both salts are deposited and the glycocholate crystallizes upon standing, the taurocholate remaining in amorphous form, resembling oily or resinous matter. If the deposit is dissolved in water, solution of lead acetate will throw down a lead glycocholate, while the addition of lead subacetate to the remainder will precipitate the taurocholate (U. S. Dispensatory, p. 490).

Tests: All the bile acids respond to Pettenkofer's test. A small portion of the salt is dissolved in a little concentrated sulphuric acid in a small porcelain dish and warmed, care being taken that the temperature does not rise higher than 60° to 70° C. A 10 per cent solution of cane sugar is then added drop by drop while the liquid is stirred with a glass rod. If compounds of cholic acid are present a beautiful red color will appear, which does not disappear at room temperature, but usually in the course of a day becomes bluish violet. The red liquid shows in the spectrum two absorption bands, one at F and the other between D and E near to E. Care must be taken not to heat too much nor to add too much sugar. The sulphuric acid must be free from sulphurous acid and the lower oxides of nitrogen. As albumin, oleic acid, amyl alcohol, morphine, etc., may give a similar reaction, spectroscopic examination should not be omitted in doubtful cases (Hammarsten, Lehrbuch der physiolog. Chemie, p. 312).

Furfurol Test (Mylius): The substance is dissolved in alcohol and for every one cubic centimeter of the alcoholic solution, one drop of a 1:1000 furfurol solution and one Cc. of concentrated sulphuric acid are added and the mixture cooled, if necessary, so that the temperature may not rise too high. The same color reaction occurs as in Pettenkofer's test.

Actions and Uses.—The bile salts constitute the main active principles of bile, and therefore share the actions and uses of the latter, perhaps with the advantage of more constant composition. When injected into the circulation they cause severe nervous and cardiac depression, not observed when they are given by mouth. They are generally credited with a slight antiseptic and laxative action, with enhancing the efficiency of the resinous hydragogue cathartics, and with emulsifying and hence favoring the absorption of fat. They stimulate the secretory activity of the liver, increasing both the fluids and solids of the bile. While they are regarded as the most powerful of the so-called cholagogues, it is doubtful if even their effect is very pronounced.

They may be used in obstructive jaundice, although the rationale is somewhat doubtful; their use in biliary fistula is more reasonable, if the nutrition is noticeably affected.

Proprietary Preparations:

BILEIN—Sodii glyco-taurocholas bovis—Abbott.—Bilein is *the name given to a mixture of the essential salts of the bile.*

Actions and Uses.—See Bile Salts.

*Manufactured by the Abbott Alkaloidal Co., Chicago. U. S. trade*mark No. 44,140.

Bilein Pills, 1/4 grain.—Each pill contains bilein 0.015 Gm. (1/4 grain).

Bilein Pills, 1/8 grain.—Each pill contains bilein 0.008 Gm. (1/8 grain).

Bilein Pills, 1/12 grain.—Each pill contains bilein 0.006 Gm. (1/12 grain).

BILE SALTS-Fairchild.—Bile salts-Fairchild is a *preparation* obtained from fresh ox-gall, *consisting essentially of sodium* glycocholate and sodium taurocholate, in the proportion existing in ox bile.

Action and Uses.—See Bile Salts.

Dosage.—0.13 to 0.4 Gm. (2 to 6 grains); 4 to 5 Gm. (60 to 75 grains), per day.

Manufactured by Fairchild Bros. & Foster, New York.

COLALIN.—*Colalin consists essentially of a mixture of hyoglycocholic and hyotaurocholic acids, obtained from bile.* To preserve the pulverulent condition a little magnesium carbonate is added.

Colalin is a yellow powder of faint odor and persistent bitter taste. It melts at 103° to 107° C. It is slightly soluble in water and acid toward litmus.

Colalin should be readily soluble in alcohol and this solution should rotate polarized light to the right. It should dissolve almost entirely in a dilute solution of sodium carbonate with evolution of carbon dioxide and in a dilute solution of sodium hydroxide. The solution in *sodium hydroxide* should not be rendered turbid by the addition of barium hydroxide T. S. (absence of fatty acids). It should not contain more than a trace of sulphur (absence of taurin).

Actions and Uses.—See Bile Salts, above.

Dosage.—0.015 to 0.030 Gm. (¼ to ½ grain) three to four times daily; for children from 0.008 to 0.015 Gm. (⅛ to ¼ grain).

Manufactured by Rufus Crowell & Co., Somerville, Mass. (Schieffelin & Co., New York).

Colalin Tablets, ½ grain.—Each tablet contains colalin 0.03 Gm. (½ grain).

Colalin Tablets, ¼ grain.—Each tablet contains colalin 0.015 Gm. (¼ grain).

Colalin Tablets, ⅛ grain.—Each tablet contains colalin 0.008 Gm. (⅛ grain).

BISMUTH SUBCARBONATE PREPARATIONS.

CREMO-BISMUTH—Mistura Bismuthi Subcarbonatis Hydrati, Mulford.

Cremo-bismuth is a mixture said to consist of bismuth subcarbonate suspended in water in a finely divided state, each 100 Cc. representing the equivalent of 8.66 Gm. (40 grains in one fluid ounce) of bismuth subnitrate.

Dosage.—4 to 16 Cc. (1 to 4 fluidrams) every two or three hours.

Prepared by the H. K. Mulford Co., Philadelphia. U. S. trademark No. 29,335.

LAC BISMO—Mistura Bismuthi, Hart.—Lac Bismo is a mixture said to consist of bismuth hydroxide and bismuth subcarbonate, suspended in water, in a finely divided state, and containing 0.16 Gm. (2½ grains) of the salts in 4 Cc. (1 fluidram).

Dosage.—4 to 16 Cc. (1 to 4 fluidrams).

Prepared by E. J. Hart & Co., Ltd., New Orleans, La. U. S. trademark.

BISMUTH SUBGALLATE PREPARATIONS.

BISMUTH SUBGALLATE.—Bismuth subgallate is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physicians Manual of the Pharmacopeia and the National Formulary.

AIROL—Bismuthi Iodosubgallas—Bismuth Oxyiodogallate. Airoform.—Airol. $C_6H_2(OH)_3(COOBiI(OH) = C_7H_5O_6IBi$., is a combination of bismuth oxyiodide (subiodide) and gallic acid.

It is prepared by heating molecular quantities of bismuth subgallate and hydriodic acid or bismuth oxyiodide and gallic acid, in the presence of water, until a grayish-green product results, which is drained and dried.

It is a voluminous grayish-green, odorless and tasteless powder, insoluble in alcohol, ether, chloroform, and olive oil, slightly soluble in glycerin. It is practically insoluble in water, communicating to water a red color on standing, slowly in the cold, but readily when heated, being decomposed with liberation of iodine and bismuth subgallate. It is readily soluble, with decomposition, in dilute alkalies and mineral acids. It is decomposed on exposure to moist air, turning red, but in admixture with glycerin and a little water it long remains unaltered.

Airol may be identified by the appropriate tests for its components.

It is incompatible with water and calomel. It should not be exposed to moist air.

Actions and Uses.—As it liberates iodine in the nascent state in the presence of wound secretion it is said to be useful as a substitute for iodoform in the treatment of wounds, burns, skin diseases, gonorrhea, etc.

Dosage.—It is used externally in the pure state or diluted with talc, or in the form of a 10 per cent. suspension in equal parts of glycerin and water, or as a 10 to 20 per cent. ointment with 2 parts of petrolatum and 7 parts of wool fat.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 544,104 (Aug. 6, 1895; expires 1912). German patents Nos. 80,399 and 82,593. U. S. trademark No. 79,760.

BISMAL—Bismuthi Methylen-Digallas.—Bismal, $4(C_{15}H_{12}O_{10}).3Bi(OH)_3 = Bi_3C_{60}H_{57}O_{49}$, is a compound of bismuth hydroxide and methylendigallic acid.

It is obtained by digesting 4 molecules of methylendigallic acid with three molecules of bismuth hydroxide in water.

It is a voluminous gray-brown powder, insoluble in water or gastric juice, but soluble in alkalies, forming yellowish red solutions.

Actions and Uses.—Bismal is an astringent and is said to be useful for the treatment of chronic diarrhea.

Dosage.—0.12 to 0.3 Gm. (2 to 5 grains) in cachets or powder.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 605,246 (June 7, 1898; expires 1915). German patent No. 87,099 (dropped in 1890).

BISMUTH AND IRON CITRATE (SOLUBLE), Wellcome Brand—Bismuthi et Ferri Citras, Wellcome.—Bismuth and iron citrate (soluble), Wellcome brand is a "scale salt" containing bismuth citrate and ferric citrate in amounts corresponding to from 38 to 40 per cent. each of the respective anhydrous salts (corresponding to 20 to 21 per cent. bismuth and 8.7 to 9.1 per cent. iron), the combination being rendered soluble in water by means of ammonia.

Bismuth and iron citrate (soluble) occurs in yellowish-green scales, readily soluble in water, having a saline, mildly ferruginous taste.

A solution of bismuth and iron citrate (soluble) is acid toward litmus; addition of dilute acids or of ammonia water renders the solution darker but does not cause precipitation; addition of sodium hydroxide T. S. causes formation of a reddish-brown precipitate and evolution of ammonia.

The iron content of bismuth and iron citrate soluble may be determined by the methods prescribed for ferri et ammonii citras U. S. P. The amount of bismuth is determined by precipitating by hydrogen sulphide from an acid solution, dissolving the bismuth sulphide obtained in dilute nitric acid, precipitating the bismuth from this solution by ammonium carbonate and weighing as bismuth oxide.

Actions and Uses.—It has the properties of iron and soluble bismuth salts. Its administration is proposed by the manufacturer in cases of dyspepsia accompanied by anemia; that the sedative action of bismuth may be exerted on the digestive organs, while the iron may combat the anemia.

Dosage.—0.3 to 0.65 Gm. (5 to 10 grains).

Manufactured by Burroughs, Wellcome & Co., London and New York. Not patented or trademarked.

BISMUTH AND LITHIUM CITRATE (SOLUBLE), Wellcome Brand—Bismuthi et Lithii Citras Solubilis, B. W. & Co.—Bismuth and lithium citrate (soluble), Wellcome brand, is a "scale salt" of bismuth and lithium citrate containing 40 to 45 per cent. of bismuth (Bi) and 2.5 to 3 per cent. of lithium.

Bismuth and lithium citrate (soluble) occurs in colorless scales, readily soluble in water. Its aqueous solution is acid toward phenolphthalein, but alkaline toward lithmus T. S.

Tests. If 1 Gm. of the salt is warmed with 10 Cc. potassium hydroxide no ammonia is evolved (absence of ammonium compounds).

Actions and Uses.—Recommended by the manufacturers as a convenient form of medication when the effects of both lithium and bismuth are desired, as in gouty dyspepsia.

Dosage.—0.13 to 0.3 Gm. (2 to 5 grains).

Manufactured by Burroughs, Wellcome & Co., London, England, and New York. Not patented or trademarked.
patented in U. S.

BORNYVAL.—Bornyval is a name applied to capsules containing borneol isovalerate $C_{10}H_{17}O.C_5H_9O$, the isovaleric acid ester of borneol, 0.25 Gm. (4 minims).

It is prepared by the condensation of equal molecular quantities of borneol and isovaleric acid.

Borneol isovalerate is a clear aromatic liquid, having an odor resembling oil of rosemary and at the same time a weak odor and taste of valerian. It is insoluble in water, but dissolves in all proportions of alcohol and ether. The liquid boils at 255° to 260° C. (417° to 426° F.) under ordinary pressure. At a pressure of 50 mm. it boils at 150° to 170° C. (302° to 338° F.). Its specific gravity is 0.945 to 0.951; it is dextrorotatory. The alcoholic solution 1:10 after the addition of a drop of phenolphthalein solution should be distinctly reddened by a drop of tenth-normal alkali.

Actions and Uses.—As borneol isovalerate forms a large part of oil of valerian, its action is similar to that of the official drug. It reduces reflex excitability and acts as a nervous sedative.

It is said to be useful in the various neuroses, especially those of the circulatory, digestive and central nervous systems.

Dosage.—0.25 to 0.75 Gm. (4 to 12 minims) from two to four times daily. It is best given after meals with some milk, coffee or similar drink to avoid eructations.

Manufactured by J. D. Riedel, Aktiengesellschaft, Berlin, Germany (Riedel & Co., New York). U. S. trademark No. 56,451. Not patented in U. S.

BROMETONE.—Tribrom-Tertiary-Butylalcohol. — Acetone-Bromoform.—Brometone is 1,1,1-tribrom-2-methyl-propan-2-ol, $CBr_3.C(OH)(CH_3).CH_3 = C_4H_7OBr_3$, produced by the reaction of acetone on bromoform.

Made by the action of caustic alkalies on a mixture of bromoform and acetone.

Occurs in fine white, prismatic crystals which possess a camphoraceous odor and taste. It is slightly soluble in water, soluble in alcohol, ether, benzin and most organic solvents. It melts at about 167° F. (332.6° F.) and volatilizes on exposure to air.

Actions and Uses.—Brometone is claimed to have the sedative action of the bromides without the disadvantage of producing bromism. In doses of 0.3 Gm. (5 grains) four or five times a day, in adults, it is claimed to cause no unpleasant results and to produce no disturbance of the digestive organs, and to have no appreciable effect on the secretions. Its action is prompt and its effect is manifest for several hours. In doses exceeding 1.6 Gm. (25 grains) daily it may produce dizziness, vertigo, anorexia, and mental hebetude, all of which symptoms disappear on discontinuance of its use. Therapeutically it has been said to be useful in mild conditions of excitation and insomnia, in so-called narcotic abstinence, in hysteria, and in nervous affections generally. It relieves some forms of cough and is said to produce amelioration in some cases of epilepsy. It has been used to relieve dizziness due to labyrinthine disturbances.

Dosage.—The dose is 0.3 Gm. (5 grains), dry or in capsules, to be repeated two or three times during twenty-four hours.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

BROMIPIN.—Brominized Sesame Oil. Merck.—Bromipin is a bromine addition product of sesame oil.

It is prepared by the action of bromine chlorid on sesame oil, in sufficient quantities, theoretically calculated, to produce the required brominization.

It is a yellow, oily liquid, having a purely oleaginous taste, and having a sp. gr. of 0.995 to 0.997.

If to 1 Cc. of bromipin in 1 Cc. of chloroform a few drops of phenolphthalein solution be added, the addition of one drop of half normal potassium hydroxide should produce a red color (limit of acidity). Estimation of bromine; 1 Gm. of bromipin 10 per cent., or 0.3 Gm. of bromipin 33⅓ per cent. is boiled with a solution of 2 Gm. of potassium hydroxide in 10 Cc. of alcohol until saponified. The solution is evaporated on a water bath, the residue is charred and the char is repeatedly extracted with small portions of water, and these are passed through a filter. To the filtrate 5 Cc. of nitric acid, 15 Cc. of tenth-normal silver nitrate and 1 Cc. ferric-ammonium sulphate test solution are added, and the excess of silver nitrate is determined with tenth-normal ammonium sulphocyanate. 1 Cc. tenth-normal silver nitrate=0.007936 Gm. of bromine.

Actions and Uses.—Bromipin acts like the bromides, but as it yields its bromine more slowly it is thought to have less tendency to produce brominism. The combination is not broken up in the stomach, but a portion of the bromine is split off as soon as the oil enters the intestine. The oil with the remaining bromine is easily absorbed, and, similarly to other fats, is largely deposited in the tissues, where it is slowly split up. It is said to be more lasting in its action than the bromides.

Dosage.—1.3 Gm. (20 grains) of 33 1-3 per cent. bromipin or 4 Cc. (1 fluidram) of 10 per cent., which may be increased in cases of epilepsy to from 2.6 to 10.4 Gm. (40 to 160 grains) of 33 1-3 per cent. bromipin or from 8 to 32 Cc. (2 to 8 fluidrams) of 10 per cent. bromipin. The liquid may be given in emulsion with peppermint water and syrup, or pure, flavored with oil of peppermint.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York.) U. S. patent No. 774.224 (Nov. 8, 1904; expires 1921). German patent No. 96.495.

Bromipin, 10 per cent.—Bromipin, 10 per cent. is a 10 per cent. brominized sesame oil.

Bromipin, 33⅓ per cent.—Bromipin, 33⅓ per cent. is a 33⅓ per cent. brominized sesame oil.

Capsules of Bromipin, 33⅓ per cent.—Each capsule contains bromipin 33⅓ per cent. 2 Gm. (30 grains).

Tablets of Bromipin, 33⅓ per cent.—Each tablet contains bromipin 33⅓ per cent. 1.2 Gm. (19 grains).

BROMO-MANGAN—Liquor Ferro-Mangani Bromopeptonati "Dieterich."—Bromo-mangan is Ferro-mangan Dieterich with the addition of 3 per cent. of bromopeptone. Bromopeptone contains 11 per cent. of bromine.

The process of preparation is the same as that given under Ferro-mangan "Dieterich" with the addition of a solution of bromopeptone.

Bromo-mangan is a clear dark brown liquid of agreeable odor and taste.

Method of Valuation: After determination of the percentage of iron and manganese, a test method should be employed as described by Dr. Karl Dieterich in Helfenberg Annals, 1901, pages 162-165, to ascertain the percentage of halogens in bromopeptone: About 0.5 bromopeptone should thoroughly mixed with a few grammes of a mixture of 1 part potassium nitrate and 2 parts sodium carbonate, either in a porcelain or platinum crucible. The mixture is then covered with a light layer of sodium carbonate, covered and carefully heated until reaction sets in. When finished a little potassium nitrate is added to obtain a smooth flux, then the molten mass is exposed to glowheat for about 15 minutes. After cooling the mass is dissolved in hot water, rinsed into a beaker, filtered, if necessary, acidulated with diluted acetic acid and bromate present reduced with sulphurous acid. The excess of acid is driven off by the heat, the liquid strongly acidulated with nitric acid, again heated, until the gas formation ceases, then precipitated while hot with silver nitrate. The silver bromide is collected on a weighed filter, washed with very dilute ammonia water, as the preparation contains hydrochloric acid, dried and weighed.

Actions and Uses.—Bromo-mangan is said to be a reconstructive tonic, blood-making adjuvant and a sedative.

It is claimed to be useful when anemia is associated with nervous disturbances, as in epilepsy, neurasthenia, hysteria, etc.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany (Reinschild Chemical Co., New York). U. S. trademark No. 44,333.

BROMURAL. — Bromural (CH_3.CH(CH_3)CHBr.CO)HN.CO.NH_2 = $C_6H_{11}N_2O_2Br$, is 2-monobrom-isovaleryl-urea obtained by the interaction of urea with brom-isovaleryl bromide.

Bromural forms small, white, almost tasteless needles which are easily soluble in hot water, ether, alcohol and alkalies, but less readily in cold water. It sublimes on heating and melts in the neighborhood of 145° C. (293° F.).

Bromural can be precipitated from a 10 per cent. sodium hydroxide solution with acids. The presence of bromine may be demonstrated with fusion with sodium carbonate and potassium nitrate and testing for a bromide with silver nitrate solution. On heating the alcoholic solution of bromural with sodium ethylate for several hours on the water bath, sodium bromide will precipitate. If this be filtered off and the filtrate evaporated, a crystalline mass will remain which can be recrystallized from water. *This is dimethylacrylic acid*, melting at 280° C.

If 1 Gm. bromural be boiled for about 1 minute with 10 per cent. solution of sodium hydroxide, ammonia obtained from the urea will be given off.

If the hot liquid be then cooled, acidified with nitric acid and extracted with ether, and the ether evaporated an oily fluid, 1-brom-isolvaleric acid, which has the specific odor of valeric acid, will remain.

The biuret reaction cannot be obtained. On melting bromural and adding concentrated sodium hydroxide solution and copper sulphate, no color reaction will take place.

Actions and Uses.—Bromural is a nerve sedative which is claimed to produce sleep without markedly affecting the circulation or respiration. All action by bromural is said to cease after from three to five hours. In many cases, however, the sleep caused by the preparation continues beyond the limits of its action. It is claimed to be useful as a nerve sedative and for the purpose of inducing sleep in functional nervous diseases. Bromural does not produce the desired effects in cases of insomnia where pain, cough, angina pectoris and excitement or delirium exist.

Dosage.—As a nerve sedative 0.3 Gm. (5 grains) three times daily; as a specific at bedtime, 0.6 Gm. (10 grains), which dose may be repeated if needful during the night, after the action of the first dose has ceased.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany (Knoll & Co., New York. Merck & Co., New York). U. S. patent No. 914,518 (March 9, 1909; expires 1926). U. S. trademark No. 61,165. German patent No. 185,962.

Bromural Tablets, 5 grains.—Each tablet contains bromural 0.3 Gm. (5 grains).

BROVALOL.—Brovalol is bornyl brom-valerate, CH_3.CH(CH_3).CHBr.COO($C_{10}H_{17}$) = $C_{15}H_{25}O_2Br$, the brom-isovaleric-acid ester of borneol. It contains 25.2 per cent. bromine.

Brovalol is obtained by esterification of borneol with bromisovaleric acid or its derivatives.

Brovalol is a colorless, oily liquid, having a slight aromatic odor. Under 10 mm. pressure it boils at 163° C. (325.4° F.). It is insoluble in water but soluble in alcohol, chloroform and ether.

Action and Uses.—Brovalol acts as an analeptic, antispastic and nervine. It is claimed to be well tolerated even in large doses and to possess greater sedative power than similar valeric acid derivatives, due to its bromine content.

Dosage.—0.25 to 0.75 Gm. (4 to 12 grains) several times a day. It is supplied only in capsules (pearls), each containing 0.25 Gm. (4 grains).

Manufactured by Chemische Fabrik auf Actien vorm. E. Schering. Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 930.054 (Aug. 3, 1909; expires 1926). U. S. trademark applied for.

BUTYL-CHLORAL HYDRATE—Butyl-Chloral Hydratum.—Trichlorbutylidene Glycol—Croton Chloral Hydrate—Butyl-Chloral Hydras (British Pharm., 1908). Butyl-chloral Hydrate is 2, 2, 3-trichlorbutan-1, 1,-di-ol, CH_3.CHCl.CCl_2.CH$(OH)_2$ = $C_4H_7O_2Cl_3$, a crystalline product obtained by the addition of water to the liquid butyl chloral (2, 2, 3,-trichlorbutan-ol, CH_3.CHCl.CCl_2.CHO).

Butyl-chloral hydrate occurs in pearly white, trimetric laminæ, having a pungent but not acrid odor, and an acrid, nauseous taste. It fuses at about 77.8° C. (172° F.) to a transparent liquid, which, in cooling, commences to solidify at about 71.1° C. (160° F.). It is soluble in about 50 parts of water, and its own weight of glycerin or of alcohol (90 per cent.); it slowly dissolves in 20 parts of chloroform. From a solution in alcohol it is precipitated by the gradual addition of water, in the form of globules said to consist of butyl chloral alcoholate $C_4H_5Cl_3O.C_2H_5OH$. The alcoholic solution is neutral and the aqueous solution neutral or but slightly acid to litmus. It gives no precipitate with test-solution of silver nitrate. It does not yield chloroform when heated with solution of potassium hydroxide or with milk of lime (absence of chloral hydrate).

Actions and Uses.—Its action is similar to that of chloral, except that it is said to be less depressing and more analgesic. It has been especially recommended for facial neuralgia.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains).

CALCIUM LACTATE—Calcii Lactas.—Calcium lactate, $Ca(C_3H_5O_3)_2.5H_2O$, is the calcium salt of lactic acid.

It is prepared in the manufacture of lactic acid by the lactic acid fermentation of sugar or by the neutralization of lactic acid by calcium carbonate.

It occurs in white crystalline masses or powder, odorless and tasteless. It is soluble in 9.5 parts of water, easily soluble in hot water. At 100° C. (212° F.) it loses water of crystallization.

If calcium lactate be heated gently with a mixture of sulphuric acid and potassium permanganate the odor of aldehyde will be given off. An aqueous solution of calcium lactate will throw down a white precipitate, insoluble in water and acetic acid, on the addition of a solution of ammonium oxalate.

Actions and Uses.—Calcium lactate has the pharmacologic action of other calcium salts. Being less irritating than the chloride, it may be given subcutaneously. It is used in the belief that it will increase the coagulability of the blood.

CALOMELOL—Hydrargyri Chloridum Mite Colloidale.—Colloidal Calomel.—Calomelol is a soluble colloidal form of calomel, containing albuminoids.

According to the patent it is prepared by acting on a solution of sodium chloride in presence of a proteid with mercurous nitrate and precipitating the water soluble colloidal calomel by means of alcohol. The precipitate is washed with alcohol, redissolved in water with the aid of a little alkali, and from this solution the colloidal calomel is obtained either by evaporation or by precipitation with alcohol.

It forms a white-gray, odorless and tasteless powder, containing 80 per cent. of mercurous chloride and 20 per cent. of proteids. It is soluble in water, forming an opalescent solution; insoluble in alcohol, ether and benzene. It is precipitated from its aqueous solutions by acids, the precipitate being redissolved by alkalies.

Actions and Uses.—Its action is the same as that of calomel but it is claimed to be superior because of its solubility in water, acting more rapidly and efficiently, and to be nonirritant and particularly non-toxic. The indications for its use are the same as for calomel.

Dosage.—Internally the same as calomel. Externally it is used as a dusting powder, mixed with an equal quantity of starch or of a mixture of starch and zinc oxide, or in the form of calomelol ointment. It should be guarded from the light.

Manufactured by the Heyden Chemical Works, New York. U. S. patent No. 740,835 (Oct. 6, 1902; expires 1920). U. S. trademark.

Calomelol Ointment.—Calomelol Ointment is an ointement containing 28 per cent. of mercury in the soluble form of calomelol (which see) and 2 per cent. in the insoluble form.

It is prepared by combining 45 parts of calomel with sufficient lard to make 100 parts.

Dosage.—6 Gm. (90 grains) daily for inunction in syphilis.

CARBOSANT.—Santalolis Carbonas.—Carbosant is santalyl carbonate, $CO(OC_{15}H_{23})_2 = C_{31}H_{46}O_3$, the carbonic acid ester of santalol.

Carbosant is produced by the chemical interaction of santalol with carbonyl chloride, $COCl_2$, and alkalies, or with carbonic acid esters.

Carbosant is an oily yellow fluid, almost tasteless and odorless, insoluble in water, and soluble in alcohol and ether. It contains 94 per cent. of santalol.

Carbosant is saponified when heated with an alcoholic solution of caustic alkali with the production of potassium carbonate and santalol, both of which can be identified by appropriate tests.

Actions and Uses.—The action of carbosant which is chemically broken up into its component parts in the intestine is identical with that of santalol, the active constituent of official sandal wood oil. It tends to diminish the secretions of the mucous membrane of the urinary tract, and to relieve pain in the urinary organs.

Carbosant is said to be useful in the treatment of gonorrhea, cystitis and prostatitis.

Dosage.—0.6 Cc. (10 minims) three times daily. It may be given in capsules, each containing 0.3 Gm. (5 grains), 2 capsules being given three times daily.

Manufactured by the Chemische Fabrik von Heyden at Radebeul near Dresden, Germany. (Heyden Chemical Works, New York.) German patent No. 182,627. Not patented in the United States. U. S. trademark applied for.

CEPHÆLINE—Cephælina.—Cephæline is an alkaloid, $C_{14}H_{20}NO_2$, obtained from ipecacuanha root.

Cephæline occurs as snow-white, fine, interlacing needles which readily turn yellow. It is soluble in ether and caustic soda solutions, melts at 96°-102° C. (204.8°-215.6° F.) and turns brown when heated to 120° C. (248° F.). With Fröhde's reagent, a freshly prepared solution of 0.1 Gm. sodium molybdate in 10 Cc. concentrated sulphuric acid, it gives a purple color which hydrochloric acid changes to prussian blue.

Actions and Uses.—These are identical with those of ipecac. It is relatively more emetic and less nauseant and causes relatively more renal irritation and less cardiac depression. It may be employed as an emetic and expectorant.

Dosage.—0.005 to 0.01 Gm. (1/12 to 1/6 grain) in pills or as a powder triturated with sugar of milk. The hydrochloride is soluble.

CHINOSOL.—Normal Oxychinolin Sulphate.—Chinosol is a normal oxychinolin sulphate $(C_9H_7ON)_2H_2SO_4$.

Chinosol is a yellow crystalline powder of saffron-like odor and burning taste. It melts at from 175° to 177.5° C. (347° to 351.5° F.). It dissolves readily in water but with difficulty in alcohol and it is insoluble in ether. The aqueous solution has an acid reaction.

A drop of solution of ferric chloride produces in a solution of chinosol a marked green coloration. Barium chloride produces a white precipitate. Solutions of alkaline hydroxides precipitate from an aqueous solution of chinosol a white precipitate, consisting of interlaced crystalline needles, which after filtration, washing and careful drying in a desiccator should melt at from 73° to 75° C. On incineration chinosol should not leave a weighable residue

Actions and Uses.—So far as experimental evidence goes, chinosol is nontoxic. It is a powerful antiseptic, slightly stronger in this respect than mercuric chloride and considerably stronger than phenol. It exerts an antiseptic action in solutions containing 1 part to 5,000. It is a feeble germicide being weaker than phenol and much weaker than mercuric chloride.

Dosage.—For internal use 0.3 Gm. (5 grains) three times daily. As an antiseptic the average strength of solution is 1 to 1,000; as a nasal or vaginal douche, the strength should be 1 part to 5,000, and as an eye-wash 1 to 8,000, gradually increasing the strength of the solution according to the sensitiveness of the patient.

Manufactured by Franz Fritzsche & Co., Hamburg, Germany (Chinosol Co., Parmele Pharmacal Co., New York). U. S. patent No 906,918 (Dec. 15, 1908; expires 1925). U. S. trademark No. 28,750.

CHLORALFORMAMIDE.

Chloralformamide is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physicians' Manual of the Pharmacopeia and National Formulary.

CHLORALAMID.—A name applied to Chloralformamidum, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany. (Schering & Glatz, New York). German patent No. 50,536; U. S. patents Nos. 429,039 and 429,040 (expired).

CHLORAL HYDRATE PREPARATIONS

ANTIPYRINE CHLORALHYDRATE—Antipyrinæ Chloralhydras.—Monochloral-Antipyrine.—Antipyrine Chloralhydrate, $C_{11}H_{12}N_2O.CCl_3CH(OH)_2 = C_{13}H_{15}N_2O_3Cl_3$, is antipyrine combined with one molecule of hydrated chloral.

It is prepared by triturating molecular proportions of antipyrine and hydrated chloral together, dissolving the resultant oily liquid in hot water and allowing the solution to cool.

It occurs in colorless octahedral crystals or a white crystalline powder, melting at 67° C. (152.6° F.). It is soluble in 10 to 11 parts of cold water, easily soluble in hot water, and in 3.5 parts of alcohol, forming neutral solutions.

The aqueous solution gives the usual reaction for antipyrine (a blood-red color with ferric chloride) and for hydrated chloral (turbidity and separation of chloroform when warmed with caustic alkali). Ammoniacal silver nitrate is reduced with the formation of a silver mirror, but the aqueous solution (1:10) acidified with nitric acid is not altered by silver nitrate nor precipitated by hydrogen sulphide. Antipyrine Chloralhydrate dissolves in concentrated sulphuric acid without coloration and leaves no weighable residue when incinerated on platinum.

It is incompatible with alkalies, their carbonates and bicarbonates and with metallic salts.

Actions and Uses.—Antipyrine Chloralhydrate is an analgesic and hypnotic resembling chloral in its action, but said to be less liable to produce injurious effects on the vasomotor center or the heart. It may be used where chloral is indicated, as in mild forms of mental excitement, incipient delirium tremens, and also in insomnia caused by pain.

Dosage.—1 to 2 Gm. (15 to 30 grains); although supposed to be less toxic than chloral, larger doses up to 3 Gm. (45 grains) should be used with caution. It may be given dissolved in water (1:10) flavored with syrup of orange or aromatic elixir.

Manufactured by Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

CHLORBUTANOL. — Trichlor-Tertiary-Butylalcohol — Acetone-Chloroform.—Chlorbutanol is 1,1,1-trichlor-2-methyl-*propan*-2-ol, $CCl_3.C(OH)\ (CH_3).CH_3 = C_4H_7OCl_3$, produced by the reaction of acetone on chloroform.

Made by the action of caustic alkalies on a mixture of chloroform and acetone. It is a white, crystalline, volatile compound having a camphoraceous odor and taste. It is soluble in water (8-1000), in fixed and volatile oils, and glycerin; very soluble in alcohol, ether, benzin, glacial acetic acid, chloroform and acetone.

Actions and Uses.—It is said to be absorbed unchanged from the alimentary tract, but to be decomposed in the body. It is a local anesthetic with an action weaker than that of cocaine, but sufficient frequently to prevent vomiting from gastric irritation. Its antiseptic action is said to be fifteen times as strong as that of boric acid. It acts on the central nervous system similarly to chloral, and although the claim has been made that hypnotic doses are without effect on the circulation and respiration independent observers have described a fall of blood pressure and interference with respiration in animals, and consider it fully as dangerous as chloral. In man 100 grains caused severe symptoms, but recovery occurred. It is claimed that no habit is induced, but this may be referable to its restricted employment. It is said to be useful as a mild local anesthetic in dentistry, etc., as a preservative for hypodermic solutions; for insomnia, vomiting, and for spasmodic conditions. It is also said to be useful as introductory to general anesthesia, lessening excitement and nausea.

Dosage.—0.3 to 1.5 Gm. (5 to 20 grains) dry or in capsules. Hypodermically as a local anesthetic a saturated aqueous solution may be used.

Proprietary Preparations:

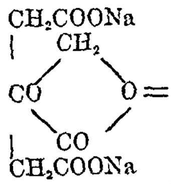
CHLORETONE.—A name applied to chlorbutanol by Parke, Davis & Co., Detroit, Mich. U. S. trade-mark.

Chloretone Inhalant.—Chloretone (chlorbutanol), 1 Gm.; camphor, 2.5 Gm.; menthol, 2.5 Gm.; oil of cinnamon, 0.5 Gm.; refined liquid petroleum, 93.5 Gm.

Actions and Uses.—An anodyne, antiseptic, and emollient solution for use by inhalation as a very fine spray or nebula.

METHAFORM.—A name applied to chlorbutanol by F. Stearns & Co., Detroit, Mich. U. S. trade-mark.

CITARIN.—Sodium Anhydromethylene Citrate.

Citarin,  $= Na_2C_7H_6O_7$ is the normal sodium salt of anhydromethylene-citric acid.

Anhydromethylene-citric acid is obtained by reacting on citric acid with paraformaldehyde (German patent No. 129,255) or with chlormethyl alcohol, CH_2ClOH (German patent No. 150,949). The sodium salt is obtained by treating the acid with sodium hydroxide solution and precipitating the resulting salt with alcohol (U. S. patent No. 715,329).

It is a white, granular, somewhat hygroscopic powder, having a faintly saline and acidulous taste, and a slightly acid reaction. It is readily soluble in about 1.5 parts of water, but insoluble in alcohol. Its solutions split off formaldehyde when heated, particularly in the presence of alkalies, and mineral acids separate from its concentrated solutions methylenecitric acid.

Formaldehyde can be demonstrated by means of Jorrisson's reaction, or by sodium nitrite and sulphuric acid, or by silver nitrate and soda solution.

It is incompatible with acids and alkalies and is decomposed by heat.

Actions and Uses.—This is one of the compounds which it is claimed increase the elimination of uric acid by forming very soluble compounds with that substance. It is claimed to be useful for gout and chronic rheumatism

Dosage.—1 to 2 Gm. (15 to 30 grains), largely diluted with water.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 715,239 (Dec. 2, 1902; expires 1919).

Citarin Tablets, 15 grains.—Each tablet contains citarin 0.97 Gm. (15 grains).

COLLARGOL — Collargolum.— Colloidal Silver — Argentum Colloidale—Argentum Credé.—Collargol is a water-soluble, allotropic form of metallic silver, said to contain 85-87 per cent. of silver, and a small percentage of albumin with products of its oxidation.

Collargol occurs as small, hard, brittle, bluish-black, scale-like pieces. It is soluble in 20 parts of distilled water, producing a dark olive-brown solution which remains stable for months. No separate silver particles can be distinguished in the solution even when magnified to the highest degree under the microscope, and it has all the other characteristics of a solution. The addition of albumin to collargol prevents or delays its precipitation by acids and salts. A sufficient amount of albumin to prevent its precipitation under ordinary conditions is therefore added to collargol during its manufacture. Hence collargol, even when dissolved in spring or well water containing salts, undergoes no change, and it remains unaffected by boiling, whereas colloidal silver, containing no albumin, precipitates on being boiled.

A solution of collargol does not respond directly to the usual tests for silver. If the solution is warmed with nitric acid a white cloudiness is produced, which clears completely on standing and the silver can then be demonstrated in the usual manner. On heating a fragment of collargol on a platinum scoop, shining white metallic silver of the ordinary kind, insoluble in water, is at once formed.

Its solution should not be exposed to light or air; it is incompatible with the usual silver reagents.

Actions and Uses.—Collargol is claimed to be a systemic antiseptic and germicide.

Dosage.—In most cases it is best employed locally in the form of a 15 per cent. ointment (see Collargol ointment), 2 to 4 Gm. (30 to 60 grains) being very thoroughly rubbed into the skin; otherwise, in carefully filtered solutions, varying in strength according to the intended use; 2 per cent. to 5 per cent. for intravenous injections, 1/50 per cent. to 1 per cent. solutions for washes; 5 per cent. dusting powder, prepared with finest clay; in the form of bougies containing 0.2 Gm. (3 grains), and vaginal suppositories and tampons each containing 0.05 Gm. (¾ grain), for parenchymatous injections in 0.5 per cent. to 1 per cent. glycerin solutions. Internally a solution of 1:500 to 1:100 is given freely in teaspoonful doses added to the food, in infectious gastric and intestinal diseases. It is also given in tablets containing 0.06 Gm. (1 grain).

Manufactured by the Heyden Chemical Works, Radebeul, Germany, and Garfield, N. J. (Schering & Glatz, New York). U. S. trademark No. 32,452.

Collargol Ointment—Unguentum Credé.—Ointment of Colloidal Silver.—Collargol Ointment is an ointment containing 15 per cent. of collargol.

It is prepared by incorporating 15 parts of collargol with 5 parts of water, 10 parts of white wax, and 70 parts of benzoinated lard, observing care that the soluble silver shall not be transformed into metallic silver of the ordinary kind. This, it is asserted, it is prone to do unless great care is observed in the manipulation.

The natural color of collargol ointment is dark bluish-gray. The addition of water may impart to the ointment a brownish shade; this does not, however, in any way impair its efficiency. The ointment is good as long as it colors the skin black.

CONIINE HYDROBROMIDE—Coniinæ Hydrobromidum.—Coniine hydrobromide is the hydrobromide, $C_8H_{17}N.HBr$, of an alkaloid found in conium.

Coniine hydrobromide occurs as colorless, transparent, glistening rhombic crystals, or as a white crystalline powder, melting at 210-214° C. (410-417° F.). It is soluble in two parts of water, in three parts of alcohol, and in ether-alcohol, but insoluble in ether. The solutions are colorless and neutral. The salt contains 61.09 per cent. of coniine.

Evaporated with an excess of sulphuric acid, coniine hydrobromide becomes red, violet, blue and finally brown. An aqueous solution of the salt mixed with magnesium carbonate or oxide, and shaken with carbon bisulphide, colors the latter yellow. Addition of silver nitrate solution to a solution of coniine hydrobromide causes precipitation of yellow silver bromide; iodine test solution precipitates a reddish-brown body and tannic acid a yellowish-white compound. Coniine hydrobromide should burn when ignited, leaving no residue.

Actions and Uses.—Coniine hydrobromide paralyzes the peripheral endings of the motor nerves, producing an ever-increasing muscular weakness. To a less degree it affects the sensory nerves. With lethal doses consciousness is retained to the last. It probably depresses the spinal cord feebly and usually dilates the pupils. In therapeutic doses it is said to increase the temperature but in lethal doses it lowers it; convulsions may appear and death results from paralysis of respiration.

Coniine hydrobromide may be used for the same purpose as conium. It has been tried in chorea, paralysis agitans, whooping cough, and is said to produce a condition of calm and relaxation in maniacal and hysterical excitement. It is a dangerous remedy.

Dosage.—0.001-0.003 Gm. (1/60 to 1/20 grain) three times a day. Maximum single dose 0.005 Gm. (1/12 grain); maximum daily dose 0.015 Gm. (¼ grain). For hypodermic use a 5 per cent. solution is used.

COPPER CITRATE.—Cuprum Citricum.—Cupric Citrate.—Copper citrate is the cupric salt of citric acid, containing 34 to 36 per cent. of copper.

It occurs as a green, or bluish-green, finely crystalline, odorless powder. It is but slightly soluble in cold water. Somewhat more soluble in a cold solution of an alkali citrate, forming a greenish blue solution. More soluble in a hot solution of an alkali citrate; also soluble in ammonia water and in mineral acids.

When dissolved in ammonia water copper citrate yields an intense blue solution.

When heated to 90° C. (194° F.) the salt loses water of hydration and assumes a pale blue color. At higher temperature it blackens and at a low red heat leaves a black residue of cupric oxide.

Copper citrate should contain copper equivalent to from 34 to 36 per cent. of metallic copper.

If about 1 Gm. of copper citrate be dissolved in 20 Cc. of diluted hydrochloric acid, the solution diluted to 200 Cc. with hot distilled water, the mixture saturated with hydrogen sulphide, filtered, and the filtrate evaporated nearly to dryness on the water bath, the residue should respond to the usual tests for *citric acid.*

If 0.5 Gm. of copper citrate be dissolved in 10 Cc. of diluted hydrochloric acid and 1 Cc. of barium chloride test solution be added no turbidity should at once occur (limit of sulphate).

A solution of 0.5 Gm. of the salt in 10 Cc. of diluted sulphuric acid should not evolve any odor of acetic acid when boiled.

The salt should be free from nitrates, chlorides and carbonates.

Actions, Uses and Dosage.—Copper citrate possesses the astringent and antiseptic properties of other salts of copper somewhat modified by its sparing solubility.

It may be used for the same purposes and in doses similar to those of other salts of copper.

Non-Proprietary Preparations:

Copper Citrate, Mallinckrodt.—Manufactured by the Mallinckrodt Chemical Works, St. Louis, Mo.

Copper Citrate Ointment, 5 per cent., M. E. S. Co.—An ointment containing 5 per cent. of copper citrate and 95 per cent. of white petrolatum, without alcohol or preservative. Manufactured by the Manhattan Eye Salve Co., Owensboro, Ky.

Copper Citrate Ointment, 10 per cent., M. E. S. Co.—An ointment containing 10 per cent. of copper citrate and 90 per cent. of white petrolatum, without alcohol or preservative. *Manufactured by the* Manhattan Eye Salve Co., Owensboro, Ky.

CORYFIN.—Ethylglycolic Acid Ester of Menthol.—Coryfin is menthyl ethylglycolate, $CH_2(O.C_2H_5).COO(C_{10}H_{19}) = C_{14}H_{26}O_3$, the ethylglycolic acid ester of menthol.

It is prepared by the action of ethyloxyacetyl chloride on menthol. Coryfin is a limpid, colorless oil, having a very faint menthol odor. It boils under 20 mm. pressure at about 155° C. (311° F.) and is soluble in alcohol, ether and chloroform; difficultly soluble in water.

When heated with caustic alkalies it is split up into menthol and *ethylglycolic acid.* When incinerated on platinum foil it leaves no residue. Aqueous solutions must not have an acid reaction and must be free from chlorine and sulphuric acid.

Actions and Uses.—Soon after its application to the skin or mucous membranes a cooling effect is produced, said to be due to the splitting off of menthol, to which the pharmacologic actions of the remedy are to be ascribed.

Coryfin is said to be useful as a substitute for menthol in nervous headaches, coryza and conditions of hoarseness and pharyngeal irritation.

Dosage.—In headache it may be lightly rubbed in or painted on the forehead, avoiding contact with the eyes; in coryza it may be applied to the mucous membrane with a brush or as a spray. In throat affections a few drops (3 or 4) may be placed on a lump of sugar and allowed to dissolve in the mouth, or mixed with tepid water and used as a gargle.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 836,914 (Nov. 27, 1906; expires 1923). U. S. trademark No. 43,416.

COTARNINE HYDROCHLORIDE—Cotarninæ Hydrochloridum.—Cotarnine Hydrochloride. $C_{12}H_{13}O_3N.HCl$, is the cotarnine salt of hydrochloric acid. Cotarnine is an oxidation product of narcotine, similar to hydrastinine.

It is prepared by boiling narcotine for a long time with water or by heating it with dilute nitric acid and converting the basic product obtained into the hydrochloride.

It is a yellow, crystalline powder, soluble in water and in alcohol. Its melting point is indefinite.

If to a solution of cotarnine hydrochloride tenth-normal iodine V. S. is added, a brown precipitate of coatrnine periodide is produced, which if collected and dried over sulphuric acid melts at 140° C. (284° F.).

If to a solution of 0.1 Gm. cotarnine hydrochloride in 2 Cc. of water 3 drops of a 15 per cent. sodium hydroxide solution are added, each drop will produce a milk-white precipitate which dissolves on agitation After a time the free base separates from the clear solution, leaving the supernatant liquid clear and but faintly yellow. The base, after recrystallization from benzene, melts, with decomposition, at 130° C. (266° to 269.6° F.).

Actions and Uses.—Cotarnine hydrochloride is a hemostatic, analgesic and uterine sedative. The mechanism of its action is obscure.

It is said to be useful particularly in functional dysmenorrhea of puberty and of the climacteric; in subinvolution of the uterus after parturition and abortion, as well as in all profuse uterine hemorrhages; in bleeding from the bladder, from the nose, after extraction of teeth, etc.

Dosage.—Internally 0.05 Gm. (¾ grain) four to five times daily. Because of its intensely bitter taste, it is best given in the form of coated tablets, pills, or capsules; or by hypodermic injection (in urgent cases) 2 Cc. of a 10 per cent. solution; externally, as a styptic, pure or in strong solution.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

COTARNINE PHTHALATE—Cotarninæ Phthalas.—Cotarnine phthalate $(C_{12}H_{13}O_3N)_2C_6H_4(COOH)_2$, is the cotarnine salt of phthalic acid.

The base cotarnine, obtained from narcotine by oxidation with dilute nitric acid, *is combined with phthalic* acid to form the neutral *salt.*

It is a yellow, microcrystalline powder, easily soluble in water. The base is recognized by the tests given under cotarnine hydrochloride.

Actions and Uses.—Cotarnine phthalate is said to have hemostatic and pronounced sedative properties. Its modus operandi is unknown. Its action resembles that of *cotarnine* hydrochloride, but phthalic acid compounds have especial hemostatic properties. Cotarnine phthalate is said to be useful in uterine hemorrhage.

Dosage.—Internally in sugar-coated tablets of ¾ grain each, 3 to 5 tablets a day (up to 9 tablets a day in cases of dysmenorrhea). Locally as a dusting powder. By subcutaneous injection (3 grains dissolved in 30 minims of water) for quick arrest of severe hemorrhage.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. U. S. patent No. 742,532 (Oct. 27, 1903; expires 1920).

CREOSOTE CARBONATE.—Creosote Carbonate is a mixture of carbonic acid esters, analogous to guaiacol carbonate, prepared from creosote.

It is prepared by passing a current of carbonyl chloride into a solution of creosote in sodium *hydroxide, and purifying* the oily product by washing with weak soda solution and with water.

It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92 per cent. *of creosote.* It is odorless and has a bland oily taste. It is insoluble in water, but soluble in alcohol, ether, chloroform, benzene and in fixed oils.

The addition of a few drops *of ferric* chloride solution to the alcoholic solution should not cause any change in color. On boiling with potassium hydroxide *solution* the odor of creosote is evolved.

It is incompatible with alkalies.

Actions and Uses.—Creosote Carbonate has the same *action* as creosote, but is claimed to be non-toxic *and devoid* of irritant properties. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic.

NOTE: The Council would note that any *claims* of non-toxicity that are made for drugs that have or are supposed to have important general effects are admitted *to this* book only when they do not conflict with known facts. In all such instances, however, it is recommended that a lack of toxicity be not accepted too freely but be *considered* to mean only that toxic effects have *not* as yet been recognized with the doses that have been studied. The most sincere and apparently justified beliefs concerning this point are often ultimately *reversed by* extended experience. Much the same may be said regarding any claims that drugs are non-irritating.

Dosage.—From 0.3 to 2.0 Gm. (5 to 30 grains) for children, to 1 to 4 Gm. (15 to 60 grains) for adults *in milk, coffee,* wine, cod-liver oil or emulsion. Externally it may be applied undiluted.

Proprietary Preparations:

CREOSOTAL.—A name applied to Creosote Carbonate.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 501,235 (expired) ; U. S. trademark.

CREOSOTAL-Heyden.—A name applied to Creosote Carbonate.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York). U. S. patent No. 501,235 (expired). U. S. trademark.

DIASPIRIN.—Diaspirin is succinyl disalicylic acid, $CO(O.C_6H_4.COOH).CH_2.CH_2.CO(O.C_6H_4.COOH)$.

Diaspirin is a salicylic acid derivative, produced by the interaction of the two carboxyl groups of succinic acid with the phenolic hydroxyls of two molecules of salicylic acid, with the elimination of 2 molecules of water, *thus:* $COOH.CH_2.CH_2.COOH + 2HO.C_6H_4.COOH = CO(O.C_6H_4.COOH).CH_2.CH_2.CO(O.C_6H_4.COOH) + 2H_2O$.

It is prepared by the action of succinyl dichloride upon salicylic acid.

Diaspirin is an odorless and almost tasteless white crystalline powder, said to melt at about 178° C. (352.4 F.) (Specimens examined by the Council were found to melt at 168° C. Corr.) Soluble with difficulty in cold alcohol and glacial acetic acid; scarcely soluble in water. By heating with caustic alkalies it decomposes into succinate and salicylate. Diaspirin is a dibasic acid which reacts with bases, organic or inorganic, to form salts.

Diaspirin produces the effects of salicylates. The following special claims are made for it: That it passes unchanged through the stomach, producing no irritation, but is split into its constituents in the intestine; that it exerts a strong diaphoretic effect.

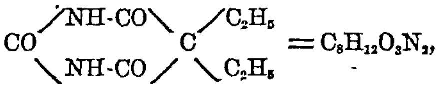
Actions and Uses.—The same as those for salicylic acid.

Dosage.—1 Gm. (15 grains) three or four times daily.

Manufactured by the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken, of Elberfeld Co., New York). U. S. patent No. 874,929 (Dec. 31, 1907; expires 1924). U. S. trademark applied for.

DIETHYL-BARBITURIC ACID AND COMPOUNDS

VERONAL — Veronalum. — Acidum diæthyl-barbituricum. Diethyl malonyl urea. Malo-urea. Veronal is diethyl-barbituric acid, 2, 4, 6-trioxy-5-diethyl pyramidin.



$$CO\langle{NH\text{-}CO \atop NH\text{-}CO}\rangle C \langle{C_2H_5 \atop C_2H_5} = C_8H_{12}O_3N_2,$$

a ureide derived from diethylmalonic acid, $COOH.C(C_2H_5)_2.COOH$, and urea, $CO(NH_2)_2$.

It may be prepared by the interaction of esters of diethylmalonic *acid with urea in the presence* of metallic alcoholates. (U. S. patent No. 782,739.). It is also obtained by condensation of diethylcyanacetic ester with urea by means of sodium alcoholate.

It is a white, crystalline powder, melting at about 188° C. (370.4° F.), *odorless and* faintly bitter. It is soluble in about 150 parts of cold water, and in about 12 parts of boiling water. It is quite soluble in ether, acetone and ethyl acetate; also slightly soluble in chloroform, petroleum benzin, acetic acid and amyl alcohol. It *forms* salts with alkalies which are soluble in water.

Prolonged heating with sodium carbonate solution liberates ammonia. Denninges' reagent produces a white precipitate; Millon's reagent produces in solution acidulated with nitric acid a precipitate soluble in an excess of the reagent.

Actions and Uses.—Diethyl-barbituric acid is quickly absorbed, especially when it is given in solution. In small doses it induces sleep apparently without any other effect. In larger doses the temperature falls and animals show marked trembling and restlessness in their sleep. In small doses it is a relatively safe hypnotic, but fatalities have followed its indiscriminate use.

It is used in simple insomnia, as well as in that accompanying hysteria, neurasthenia and mental disturbances.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in hot water, tea or milk, or, if in wafers or capsules, followed by a cupful of some warm liquid.

Manufactured by Farbenfabriken, vorm. Friedr, Bayer & Co., Elberfeld. Germany, and E. Merck, Darmstadt. Germany. (Farbenfabriken of Elberfeld Co., New York, and Merck & Co., New York.) U. S. patent No. 782.739 (Feb. 14. 1905: expires 1922). U. S. trademark.

Veronal Tablets, 5 grains.—Each tablet contains veronal 0.33 Gm. (5 grains).

SODIUM DIETHYL-BARBITURATE.—Sodii Diæthyl-barbituras.—Sodium diethylbarbiturate, Na $(C_8H_{11}O_3N_2)$ is the mono-sodium salt of diethyl-barbituric acid.

Sodium diethyl-barbiturate occurs as a white, crystalline powder, soluble in 5 parts of water at 15° C. and in about 2 parts of boiling water. The aqueous solution of the salt has a bitter alkaline taste.

The salt contains 11.18 per cent. sodium (Na) and should yield about 89 *per cent.* (theory requires 89.31 per cent.) diethyl-barbituric *acid* (JOURNAL, Jan. 23, 1909, vol. 52, p. 311).

Action and Uses.—The same as diethyl-barbituric acid, but claimed to act more rapidly on account of its greater solubility. Because of its solubility, administration by rectal injection and also subcutaneous injection has been proposed.

Dosage.—The same as diethyl-barbituric acid, which see. It should be administered in aqueous solution.

Proprietary Preparations:

MEDINAL.—Medinal is a name applied to sodium diethylbarbiturate.

Manufactured by Chemische Fabrik auf Actien vorm E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 780,241 (Jan. 17, 1905; expires 1922); 879,499 (Feb. 18, 1908; expires 1925). U. S. trademark applied for.

Medinal Suppositories, 7½ grains. Each suppository contains medinal 0.5 Gm. (7½ grains) incorporated with oil of theobroma.

Medinal Tablets, 5 grains.—Each tablet contains medinal 0.33 Gm. (5 grains).

VERONAL-SODIUM.—Veronal-sodium is a name applied to sodium diethyl barbiturate.

Manufactured by Farbenfabriken, vorm,. Friedr. Bayer & Co., Elberfeld, Germany, and E. Merck, Darmstadt, Germany. (Farbenfabriken of Elberfeld Co., New York, and Merck & Co., New York). *U. S. patent and trademark. (See Veronal.)*

Veronal-Sodium Tablets, 5 grains.—Each tablet contains veronal-sodium 0.32 Gm. (5 grains).

Prepared by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken of Elberfeld Co., New York.)

DIGESTIVE FERMENTS.

Valuation of Ferments: Qualitative tests for the activity of ferments can be easily applied, but such qualitative results have very little importance. Quantitative results also are important only in so far as they permit comparison with other ferments; and for this purpose the minutest details of the methods must be accurately observed. After investigation, the Council has decided to employ the following quantitative methods in its work:

1. *Amylolytic Power:* (For diastases, malt and pancreas preparations.) The Council does not approve the methods which are based on the time of change from blue to red color given by iodin; or the time of disappearance of all color; but instead it has adopted as the standard the amount of starch that can be converted to colorless end point in 10 minutes, by a given weight of the product, working according to the details described. (THE JOURNAL A. M. A., July 11, 1908, p. 140, and Journal Am. Chem. Soc., 1908, Vol. 30, p. 798.)

2. *Proteolytic Power in Alkaline Media:* (For trypsin and pancreatic preparations.) The approved methods are based on the quantity of fresh fibrin or coagulated egg albumen, which is dissolved by a given weight of the substance, in a slightly alkaline medium and in a given time.

3. *Proteolytic Power in Acid Media:* (For pepsin and gastric preparations.) This is determined by the U. S. P. method.

4. *Milk-Curdling Power:* (For rennet and gastric preparations.) The method is based on the quantity required to coagulate 100 Cc. of milk.

Incompatibilities: Ferments are more or less rapidly destroyed by boiling, by alcohol, by many salts, by unsuitable reaction of vehicle, by putrefaction, and by proteolytic digestion. Solutions of ferments tend to deteriorate on keeping.

Ferments are generally destroyed by each other, and also during their sojourn in the stomach; little therapeutic action can be secured beyond this organ, at least under ordinary conditions.

Therapeutic Indications.—The digestive ferments are used outside the body to predigest food. They are often applied locally for the softening of dead tissues or the solution of false membranes. They are administered internally for the purpose of supplementing or replacing deficient or absent normal secretions. In such cases they should be administered in such manner and at such times as to secure the most favorable conditions for their action. Diastases should be given with the food or before the stomach becomes highly acid. Trypsin and other ferments which are to act in the intestine should be given near the end of gastric digestion with sufficient alkali to neutralize the acid of the gastric juice. There is little if any reliable evidence that these latter ferments have any activity except in cases in which hydrochloric acid is absent from the stomach contents. In cases which present a total or nearly total lack of acid in the stomach they may be given with alkali at meal time or soon after the meal is *taken.*

Pancreatic Preparations.

DIAZYME ESSENCE.—A liquid stated to contain the amylolytic enzyme of the pancreas, devoid of trypsin and lipase in a menstruum containing 18.5 per cent. of alcohol by volume.

Diazyme essence is an amber fluid of aromatic taste and odor and slightly acid reaction.

One Cc. will convert 200 Gm. of pure starch mucilage, containing 8 Gm. of dry starch, the mixture being kept at 40° C., so that the solution will cease to give a color reaction with iodine at the end of ten minutes.

Actions and Uses.—Diazyme is capable of digesting starch and is claimed to be useful to compensate for deficient salivary and pancreatic action in the digestion of starch.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams).

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 44,878.

DIAZYME GLYCEROLE.—A liquid stated to contain the amylolytic enzyme of the pancreas, devoid of trypsin and lipase, in a menstruum containing about 60 per cent. of glycerin by volume.

It is a dense amber fluid, of agreeable taste and odor, and of slightly acid reaction.

One Cc. will convert at 40° C. 200 Gm. of pure starch mucilage, containing 8 Gm. dry starch, so that the solution will cease to give a color reaction with iodin in 10 minutes.

Actions, Uses and Dosage.—See Diazmye Essence.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 44,878.

GLYCEROLE TRYPSIN-Armour.—Glycerole trypsin is a 70 per cent. glycerin solution containing approximately 5 per cent. of trypsin powder.

Glycerole trypsin-Armour is prepared directly from the fresh pancreas of the hog.

It is a yellowish to brownish clear liquid of sweetish taste and peculiar characteristic color. Its incompatibilities are the same as those of trypsin. It should be kept in a cool place.

The strength of glycerole trypsin is tested in the same way as that of trypsin, using 3 to 5 Cc. of glycerole trypsin for 10 Gm. of moist blood fibrin.

Actions and Uses.—It is intended for internal and hypodermic use in the treatment of cancer.

Dosage.—Internally 4 to 8 Cc. (1 to 2 fluidrams) three times daily. Hypodermically 0.3 Cc. (5 minims) every other day, gradually increased, depending on the patient. This dose should be diluted with two or three volumes of sterile normal salt solution, using aseptic precautions and employing some local anesthetic.

Manufactured by Armour & Co., Chicago.

HOLADIN—Extractum Pancreaticum Integrum.—An extract of the entire pancreas containing all the constituents of the gland and exhibiting great potency in respect to the several known enzymes, trypsin, amylopsin, lipase and the milk-curdling ferment.

Holadin is a grayish-white powder, slightly aromatized, somewhat hygroscopic, freely but not wholly soluble in water.

Tests.—The tryptic power is tested as follows: 0.10 Gm. is placed in a flask, mixed by agitation with 25 Cc. of tepid water containing 0.20 Gm. sodium bicarbonate; at once 100 Cc. of milk at 40° C. is added, and then the flask kept in a water bath at 40° C. From time to time small portions are withdrawn in a beaker glass, when the addition of a few drops of dilute acetic acid will show a constant diminution in the volume and character of the curd until finally only minute, flocculent coagula are observed. Holadin should not remain in contact with sodium bicarbonate for more than a brief interval before adding the milk, as its enzymic power is rapidly decreased thereby.

To test for the fat splitting action, 0.10 Gm. of holadin is mixed with 25 Cc. of water and 100 Cc. of milk and maintained at 40° C. In about 15 minutes the presence of fatty acids can be detected by odor and taste and confirmed by chemical tests.

The action of the milk-curdling ferment is shown in the following way: 0.02 Gm. holadin is mixed with 10 Cc. water in a beaker and then 100 Cc. fresh milk, previously warmed to 40° C., poured on, with sufficient stirring to mix thoroughly, and the mixture digested, without agitation, in a water bath at 40° C. In a few minutes the milk will begin to show the characteristic evidences of curdling similar to that produced by the milk-curdling ferment of the gastric juice. When the milk, however, has acquired a semi-solid, jelly-like consistency, if it then be stirred constantly with a glass rod, the curd will break down, become diffusible and in time disappear, a behavior which is in marked contrast to the action of the milk-curdling ferment of the gastric juice which causes the formation of a firm curd, easily separable from the whey.

The starch-converting power is determined as follows: Triturate 15 Gm. of arrowroot or potato starch with 500 Cc. of distilled water, boil for 10 minutes, allow to cool, and make up to 500 Cc. with distilled water. Prepare an iodin test solution by diluting 0.5 Cc. of Liquor Iodi Compositus, U. S. P., with water to make 500 Cc. and have ready sufficient number of tubes containing an equal quantity of this solution.

Triturate 0.130 Gm. holadin in a perfectly dry mortar with 1.170 Gm. of lactose. Place 100 Gm. of the starch mucilage in a Florence flask in a water bath at 40° C. and mark "A"; place in the water bath also another flask of the same content and mark "B." Add to flask "A" 0.20 Gm. of the holadin triturate; to flask "B" add 0.05 Gm. of the holadin triturate; maintain both flasks in the water bath at 40° C. At the expiration of ten minutes withdraw from flask "A" one drop of the solution and add to one of the tubes of the iodine solution, when no coloration will occur. At the end of fifty minutes take one drop from flask "B" and add to one of the tubes of iodine solution, and at intervals of a few minutes repeat this; in about sixty minutes, no coloration, or at the most a very faint coloration, will appear. Under these circumstances, one grain of holadin will convert 135 grains of starch completely in ten minutes, and 600 grains in about sixty minutes.

Actions and Uses.—Holadin has power to digest starch and proteids and to split fats. It is claimed to be useful in various diseases in which digestion of food is imperfect.

Dosage.—Holadin is furnished only in capsules, each capsule containing approximately three grains. One capsule should be given about three hours after meals and one capsule at bedtime. The dose can be gradually increased to two or three capsules at a time.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 60,625.

Holadin and Bile Salts, Fairchild.—This preparation is a mixture of Holadin 5 parts with Bile Salts, Fairchild (which see) 1 part, put up in 3 grain capsules, containing holadin approximately 0.15 Gm. (2½ grains), and bile salts 0.03 Gm. (½ grain).

Dosage.—One capsule about three hours after meals and one capsule at bedtime.

PANASE.—Panase is a combination of the digestive enzymes of the pancreas derived from the pancreatic gland of the pig.

It is prepared by macerating the gland and extracting the enzymes together with a small amount of the proteid matter of the gland.

Panase is a light, yellowish white powder having a slight odor and somewhat mucilaginous taste. It is not entirely soluble in water or glycerin, owing to the small amount of protein present. Filtration of its solution, however, does not impair its digestive activity.

It is incompatible with strong alcohol, acids, alkalies, and other substances which destroy the activity of ferments.

Panase should possess the diastasic, proteolytic, milk curdling, and fat splitting properties of the pancreatic juice. It converts 200 times its weight of hydrous starch to loss of blue iodine reaction in ten minutes when tested according to the method of Blome (Pharm. Rev., 1906, vol. 24, p. 260). According to the method adopted by the Council it converts 113 parts of anhydrous starch to the colorless end point in ten minutes (Journal A. M. A., July 11, 1908, p. 140; Jour. Am. Chem. Soc., May, 1908, p. 798). For the methods of testing for the different enzymes see Pancreatic Preparations.

Actions and Uses.—Panase is intended to be used in cases in which it is believed that the enzymes of the pancreas are deficient or in which it is desired to hasten the digestion of starch.

Dosage.—0.13 Gm. (2 grains) or more.

Manufactured by Frederick Stearns & Co., Detroit, Mich.

Panase Essence.—Essentia Panasi. A mixture containing in each 100 Cc., 4 Gm. of panase in a menstruum containing 14 per cent. of alcohol and 12.5 per cent. of glycerin with small amount of flavoring matter and sugar. Dose 4 Cc. (1 fluidram) containing 0.16 Gm. (2¾ grains) of panase.

Panase Tablets.—Each tablet contains panase, 0.13 Gm. (2 grains).

TRYPSIN-Armour.—Trypsin is the proteolytic ferment of the pancreas.

Trypsin-Armour is prepared from the fresh pancreas of hogs with the view of retaining the proteolytic ferment in an especially active condition. It has been activated by enterokinase

It is a light yellow powder, possessing a faint odor and a meat-like taste. It is not completely soluble in water at once, but dissolves almost entirely in time. It is insoluble in alcohol and ether. Free acids (in more than traces), pepsin and large amounts of alkalies are incompatible. Solutions of trypsin should not be exposed to a temperature above 40.6° C. (105° F.).

The proteolytic power of trypsin is determined by digesting 10 grams of fresh moist blood fibrin in 50 Cc. of solution of sodium carbonate, 0.4 per cent., to which has been added 0.150 to 0.300 Gm. of the trypsin powder, maintaining the mixture at 40° C. (104° F.) for one hour, and shaking by rotation every ten minutes. The fibrin used is washed free from blood with cold water and then chopped, using an Enterprise meat chopper with plate having 5/64 inch perforations. The hashed fibrin is pressed lightly in a cloth, mixed, and is then ready for use. The residue left after one hour's digestion is compared with the amount left by employing a standard sample of trypsin powder under exactly the same conditions at the same time.

Actions and Uses.—Trypsin has the power of digesting proteid materials; it acts best at 40° C. (104° F.) and in a slightly alkaline medium.

When applied locally in solutions made slightly alkaline by sodium carbonate, it dissolves diphtheritic and other false membranes. It is claimed to have the power of destroying the cells of cancer without acting on the healthy tissue. These claims, however, are not generally accepted.

Dosage.—Trypsin is applied locally by means of a brush or as a spray. About 0.4 Gm. (6 grains) are mixed with 0.13 Gm. (2 grains) sodium bicarbonate and triturated in a mortar while adding 1 or 2 drams of distilled water, then warmed to 38° to 40.6° C. (100° to 105° F.) and applied immediately. The application may be repeated several times an hour if necessary, a fresh solution being made before each application. The internal dose is 0.13 Gm. (2 grains) or more three times daily. It should not be used for hypodermic injection.

Manufactured by Armour & Co., Chicago.

Milk Curdling Ferments.

PEGNIN—Milk Sugar Rennet.—The milk-curdling enzyme of calf's rennet, diluted with sugar of milk and sodium chloride.

Pegnin is prepared by mixing pure rennin with milk sugar and sodium chloride.

It is a fine white powder, having a sweet, saline taste, readily soluble in water, and forming a solution which readily and rapidly coagulates the casein of milk.

On adding 2 Gm. of pegnin to 200 Gm. of milk, which has been boiled and cooled to 40° C. (104° F.), and shaking the mixture, the milk should be completely coagulated in from 3 to 4 minutes, and after vigorously shaking the curd should be finely divided and equally distributed throughout the liquid. A solution of 1 Gm. of pegnin in 50 Cc. of water should require 17 to 17.5 Cc. of tenth-normal silver nitrate for complete precipitation, equivalent to 10 per cent. sodium chloride.

It is incompatible with a temperature higher than that indicated for the fermentative action.

Actions and Uses.—Producing a finely divided coagulum, it obviates the formation of the clotty curds which are liable to be produced when untreated cow's milk is taken as food. Cow's milk coagulated with pegnin as described below has been used for infant feeding and as a food for adults in stomach affections and in disturbances of the digestion incident to infectious diseases, in hyperacidity, etc.

Dosage.—8 to 10 Gm. (120 to 150 grains) of pegnin are required for 1 liter (34 fluidounces) of milk previously boiled and cooled to about 40° C. (104° F.). The mixture, after brief shaking, is allowed to stand 2 to 3 minutes, or until it is completely coagulated, and then shaken vigorously during several minutes until the coagulum has been converted into a smooth, homogeneous mixture, and set aside in a cool place. For infants it is transferred to the nursing bottle as required and heated in warm water to the body temperature (37.5° C., 99.5° F.) before feeding.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 700,631 (May 20, 1902; expires 1919).

Peptic Preparations.

ELIXIR OF ENZYMES.—Elixir of enzymes is a solution containing pepsin and rennet in a menstruum containing 20 per cent. of alcohol.

Elixir of enzymes is a light yellow, palatable, liquid preparation. One part digests about 20 parts of coagulated egg albumin in 2½ hours. Eight Cc. (2 fluidrams) coagulate 500 Cc. (one pint) of milk in a few minutes.

Actions and Uses.—It is claimed to be useful as an aid to digestion and as a vehicle for various drugs.

Dosage.—1 to 8 Cc. (1 to 2 fluidrams) with meals; children in proportion.

Manufactured by Armour & Co., Chicago.

ENZYMOL.—Enzymol is a glycerin-aqueous acid extract prepared directly from *the mucous* membrane of the fresh animal stomach, free from alcohol, but containing a trace of thymol and having an acidity due to combined hydrochloric acid equivalent to 0.26 to 0.3 per cent. of actual hydrochloric acid. It contains no free hydrochloric acid, but does contain a slight excess of protein over that combined with the acid. It is adjusted to a definite proteolytic power and contains 25 per *cent. of* glycerin by weight.

Enzymol is a light straw-colored fluid.

The presence of proteins is shown by coagulation by heat or by the addition of alcohol. The proteolytic power when acidified and tested by the method of the U. S. P. for pepsin should be such that 4 Cc. will dissolve 800 Gm. of coagulated egg-albumin in two and one-half hours.

Action and Uses.—When applied to morbid tissues enzymol is said to have the power of dissolving *them by its* proteolytic action even without the addition of acid. It is said to dissolve necrotic bone, by virtue of the combined acid which it contains. Its physiologic action is said to cease in contact with living tissue.

Enzymol is said to be useful as an application to purulent and necrotic surfaces for the removal of the morbid materials.

Dosage.—It is made ready for use by the addition of one half to one or two volumes of water; for the solution of necrotic and carious bone it may be applied undiluted.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 44,769.

ESSENCE OF PEPSIN-Fairchild.—A solution of the milk-curdling and proteolytic ferments of the gastric glands in a menstruum containing 18.5 per cent. of alcohol by volume.

The solution is prepared by direct extraction *from the* peptic glands of the stomach.

One Cc. will curdle 250 Cc. of milk at 38° C. in a few minutes, and dissolve 50 Gm. of coagulated egg albumin when tested *according to the* directions of the United States Pharmacopeia.

Actions and Uses.—Essence of pepsin has the action of rennin and of pepsin and is recommended by the manufacturers for preparing milk and in cases in which pepsin is indicated.

Dosage.—4 Cc. (1 fluidram) or more.

Manufactured by Fairchild Bros. & Foster, New York.

DIGITALIS PREPARATIONS

The chemistry of digitalis is very imperfectly understood, but several principles have been isolated in a greater or less degree of purity. These include digitalin, digitalein, digitoxin, digitonin and digitin. The term digitalin, unfortunately, is applied in a loose way to all of these principles, and in a more restricted sense to indicate digitalinum verum, or true digitalin, which is probably a definite substance.

Digitalinum purum, or German digitalin, is a mixture of several glucosides, consisting of 50-60 per cent. of digitonin and only 5-6 per cent. of true digitalin. German digitalin is the preparation usually found on the market and is ordinarily dispensed when "digitalin" is prescribed.

French Digitalin, or Homolle's digitalin, is also a mixture of several glucosides, but consists *mainly* of true digitalin.

Merck's crystallized digitalin is neither digitalin nor digitoxin, but digitonin or digitin, Merck using the three terms, crystallized digitalin, digitonin and digitin as synonyms.

Digitaline crystallisée of Nativelle is not digitalin, but is nearly identical with digitoxin.

It must be remembered, therefore, that Merck's "crystallized" digitalin, Merck's "pure" digitalin and the "true" digitalin of Boehringer and Sons, which naturally might be supposed to be identical, are *different in their action.*

DIGALEN—Liquor Digitoxini Solubilis.—Digalen is a mixture said to contain 1 part of Digitoxinum soluble Cloetta,[1] in 1,000 parts of glycerin and 1,600 parts distilled water with 7.5 per cent. of alcohol. 1 Cc. is said to contain 0.0003 Gm. of Digitoxinum Solubile Cloetta.

Digitoxinum solubile Cloetta is manufactured as follows:

The dried and finely powdered leaves of digitalis are extracted with dilute alcohol; then the extract is mixed with lead acetate solution in order to remove chlorophyll and resins, and filtered. From this filtrate the excess of lead is precipitated with sodium sulphate and the alcohol distilled off in vacuo. From the remaining aqueous solution the substance is extracted by ethereal solvents and precipitated afterward in an amorphous and pure condition according to a special secret method.

Digalen is a colorless or slightly yellowish fluid of an agreeable aromatic smell and a sweet taste which turns bitter afterward.

Digitoxinum soluble *Cloett* [illegible] an amorphous, white or slightly yellow powde [illegible] id to be about five times as great as that of [illegible] It is said to dissolve very readily in alcoh [illegible] d a little less readily in ether. It has an intensely bitter taste and causes violent sneezing. It is claimed to be the form in which *digitoxin* exists in the digitalis leaf before it is deposited in a crystalline and insoluble form.

In order to test for the active principle in digalen, a *few drops* of dilute *acetic acid* are added to 2 Cc. of digalen *solution and* then the mixture is shaken out with chloroform. This *solution* is evaporated and the residue dissolved in about 2 Cc. *of glacial* acetic acid containing traces of iron chloride. If to this solution concentrated sulphuric acid is added cautiously without mixing, so as to form a separate layer at the bottom of the test tube, a small brown ring will form between the two layers, which becomes broader in the course of some hours and expands toward the top of the tube in a blue-green to black shade, and toward the bottom of it in a reddish-brown one, while the acetic acid acquires finally a dark green-blue color.

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[1] The Council has *not* determined whether digalen contains "soluble amorphous digitoxin" or *not*, bue accepts it *merely* as a standardized soluble and fairly stable digitalis preparation.

Actions and Uses.—The same as Digitoxin.

(See Jour. A. M. A., May 8, 1909, p. 1499.)

Note.—Under certain conditions which have not yet been determined satisfactorily, digalen sometimes deteriorates, even when the bottle remains unopened.

Dosage.—Average single dose 1 Cc. (16 min.) Maximum single dose 2 Cc. (32 min.). Maximum daily dose 6 Cc. (96 min.). Intravenous injections of 1 Cc. (16 min.) may be repeated at intervals of one-half to one hour as necessary. For protracted dosage from 1 to 2 doses daily of from 7 to 14 drops are given.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. trademark No. 43,593.

DIGIPURATUM.—Digipuratum is a digitalis preparation said to contain digitoxin and digitalin in the form of tannates. It is standardized biologically by the method of Gottlieb. It is claimed that 85 per cent. of the inactive substances found in the ordinary extract have been removed and that it is free from digitonin.

Digipuratum is obtained by removing objectionable constituents from an alcoholic extract of digitalis, neutralized with alkaline hydroxides, by the addition of ether, petroleum benzene, or other suitable precipitant, and reducing the purified liquid to a powder, by evaporation with milk sugar.

Digipuratum is a greenish yellow, odorless powder of bitter taste. The active constituents of digipuratum are insoluble in cold water and diluted acids, but are easily soluble in weak alkalies.

Digipuratum responds to the following identity test: If 0.1 Gm. digipuratum is underlaid with about 3. Cc. of glacial acetic acid which contains 1 per cent. of a 5 per cent. solution of ferric sulphate, there appears a red band (presence of digitalin) and above this another, at first bright green, later changing to dark green and finally blue (presence of digitoxin).

To determine the digitoxin content, 10 Gm. of digipuratum are dissolved with moderate heat in 50 Cc. of water; 5 Cc. of 10 per cent. ammonia water are added and the liquid is then extracted with chloroform. The chloroformic extractions are filtered into a tared vessel and the chloroform removed by distillation. The residue is dissolved in 3 Gm. of chloroform and mixed with 7 Gm. of ether and 50 Gm. of petroleum ether. The separated flakes are collected on a small filter. Then the residue on the filter is dissolved in absolute alcohol, allowing the solution to run into the tared distilling vessel. The alcohol is then distilled off and the residue dried to constant weight. The digitoxin thus found should not amount to more than 0.04 Gm.

The physiologic activity is determined by the method of Gottlieb: 1 Gm. of digipuratum is treated with 19 Cc. of hot water and 1 Cc. of a 2 per cent. solution of sodium bicarbonate. If now 0.15 Cc., 0.2 Cc., and 0.25 Cc., respectively, of this solution is injected into the femoral lymphatics of freshly caught land frogs (Rana temporaria), weighing 30 Gm. each, the exposed heart of the animals should permanently be brought to a stop in the majority of instances (say in five out of six experiments) within half an hour after the administration of a 0.2 Cc. dose. If 0.2 Cc. of the 5 per cent. solution=0.01 Gm. of digipuratum, is sufficient to stop the systolic heart-beat within half an hour, then 1 Gm. of digipuratum will contain 100 units; should 0.25 Cc. of the 5 per cent. solution be necessary, the number of units of digipuratum it contains would be 80; if 0.25 Cc. should not yet prove sufficient, the preparation would be too weak to be effective; and should the systole be arrested after a dose of 0.15 Cc. within half an hour after injection, the preparation would be too strong.

The total physiologic activity having been determined, the relative amount that is due to digitoxin can be determined by using the digitoxin separated in the above quantitative determination and by the difference between this amount and the total physiologic activity the amount due to the digitalin alone can be estimated.

Actions and Uses.—The same as digitalis, but it is claimed that it is less liable to disturb the stomach and on account of its exact dosage cumulative effects can be more easily avoided than with other preparations of digitalis.

Dosage.—The same as digitalis.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. U. S. patent No. 943,578 (Dec. 14, 1909; expires 1926). U. S. trademark No. 73,012.

Digipuratum Tablets, 1 1-2 grains.—Each tablet is said to contain digipuratum 0.1 Gm. (1 1/2 grains).

DIGITALEIN, CRUDE.—Digitaleinum Crudum.—Digitalein crude is a mixture of glucosides from digitalis purpurea prepared according to the process of Schmiedeberg, containing digitoxin, digitalin and digitalein.

Commercial digitalein is an amorphous, yellowish-white, bitter powder, soluble in water and absolute alcohol, insoluble in chloroform and ether. The aqueous solution foams on shaking. The solution yields a precipitate on addition of lead acetate, ammonia water or tannic acid.

Actions and Uses.—Digitalein acts on the heart like digitalis. It is a diuretic.

Its uses are the same as those of digitalis.

Dosage.—0.001 to 0.002 Gm. (1/60 to 1/30 grain) two or three times a day.

DIGITALIN, TRUE—Digitalinum verum Kiliani.—Schmiedeberg's digitalin. Digitalin, true, is a glucoside, $C_{35}H_{56}O_{14}$, found in the seeds and leaves of digitalis purpurea and derived commercially from German digitalin.

To a solution of one part German digitalin in four parts of 95 per cent. alcohol, five parts of ether by weight (Sp. Gr. 0.720) are added and the mixture allowed to stand in a closed vessel for twenty-four hours. In the clear supernatant solution the quantity of dissolved substance is estimated and the whole then subjected to a vacuum distillation until its weight becomes 1.6 times that of the total dissolved substance. To this concentrated solution water, in an omunt 2.4 times the weight of dissolved substance, is added, forming a solution containing approximately 20 per cent. alcohol, from which crude digitalin gradually separates on standing. The crude product is washed first with 10 per cent. alcohol and then with water, and finally dried at a [illegible] rther purification is effected by boiling [illegible] animal charcoal. (Kiliani's method. [illegible] Praxis, Vol. 1, p. 1030.)

Digitalin occurs as a white amorphous powder, or in characteristic, granular masses. It melts at 217° C. (412.6° F.) and becomes yellow. It is soluble in 1,000 parts of water and in 100 parts of 50 per cent. alcohol at the ordinary temperature; easily soluble in strong hot alcohol, but nearly insoluble in ether and [illegible] dissolved in alcohol and treated with very [illegible] yields digitaligenin and two sugars.

[illegible] sulphuric acid digitalin forms a golden yel[illegible] on the addition of potassium hypobromite [illegible] magnificent rose red or violet red.

[illegible] is dissolved in 3 to 4 Cc. of glacial acetic acid to which a trace of ferric chloride solution has been added and the mixture carefully underlaid with concentrated sulphuric acid (Keller's reaction) a deep carmine red band appears; the lower layer of the acetic acid is light yellow changing to brownish. (Difference from digitoxin.)

Sulphuric acid containing a little ferric sulphate gives with a little digitalin at first an intense golden yellow color, and then a red solution; this color rapidly changes to a beautiful and permanent violet. If too much digitalin is used the red color remains and only the surface layer becomes violet.

On heating on platinum foil digitalin should burn without leaving a weighable residue.

If a granule of digitalin is covered with 2 Cc. of 10 per cent. potassium hydroxide solution no color should develop within one minute (absence of other glucosides).

If digitalin is stirred to a thin paste with water and for every 100 parts of water used 22 parts of amyl alcohol is added with shaking, and the mixture set aside in a closed vessel for 24 hours, the presence of digitonin will be indicated by the formation of distinct masses of crystals.

Action and Uses.—The same as those of digitalis. Its cumulative action is probably not so great as that of digitoxin.

Dosage.—It is impossible at present to state the correct dose for digitalinum verum Kiliani. Some authorities give the same dose as that for digitoxin, whereas others give it as much larger. It is best given in pills made by trituration with sugar of milk and massing with glucose. Solutions of digitalin rapidly lose their strength and should be freshly prepared.

DIGITALIN, "FRENCH."—Homolle's Digitalin. Digitaline Amorphe. Digitaline Chloroformique. Digitalin, French, is a mixture obtained from Digitalis purpurea by the method of Homolle, consisting mainly of digitalinum verum, Kiliani.

100 Gm. powdered digitalis leaves are moistened with one liter of water and slowly exhausted in a percolator until the percolate amounts to three liters. This is precipitated with 250 parts of lead acetate and the filtrate from the precipitate treated with 40 parts of crystallized sodium carbonate and 20 parts of sodium ammonium phosphate, in order to remove the xcess of lead. The filtrate is precipitated with 40 parts of tannic acid. The tannate is mixed with 25 parts of powdered litharge and 50 parts of purified animal charcoal and dried. From the dried mass the digitalis bodies are extracted with 90 per cent. alcohol, the latter is distilled off and the residue washed with distilled water and again taken up in 90 per cent. alcohol. This is again distilled and the residue exhausted with chloroffrm. On expelling the latter the digitalin remains behind (Hager's Pharm. Praxis, Vol. I, p. 1935).

French digitalin is a yellowish-white, amorphous powder of a peculiar aromatic odor and little taste. It is neutral to litmus, almost insoluble in water, soluble in alcohol and chloroform and insoluble in ether. It softens at 90° C. and begins to melt at 100° C. It is not precipitated by solutions of lead salts, but with tannic acid it forms a tannate insoluble in water. It is colored emerald green by concentrated sulphuric acid.

Concentrated sulphuric acid dissolves digitalin French, producing a yellow color, which finally goes over to an emerald-green color.

Action and Uses.—Action like that of digitoxin. Uses the same as those of digitalis.

Dosage.—What has been said with regard to the dose of digitalinum verum, applies to the French digitalin: the dose is variously given as 0.00025-0.002 Gm. (1/250 to 1/35 grain). Maximum daily dose 0.006 Gm. (1/10 grain). It must be used with caution and its action carefully watched.

DIGITALIN, GERMAN—Digitanilum Germanicum.—Digitalin, German, is a mixture of glucosides obtained from digitalis seeds according to the process of Walz, and consisting largely of digitonin, with digitalin verum and other glucosides.

Digitalis seeds are extracted with alcohol, the alcohol driven off, the extract diluted with water and purified by precipitation with lead acetate. The filtrate is freed from lead by sodium phosphate. From the liquid thus purified the digitalis bodies are precipitated with tannic acid, the tannate well washed with water and decomposed with lead or zinc acetate. The digitalin thus separated is taken up in alcohol, the latter carefully distilled off and the residue washed with ether as long as it takes up anything. The digitalin purified in this way is dried at a low temperature and finally powdered. (Hager's Handbuch der Pharm. Praxis, 1903, Vol. I, p. 1032.)

German digitalin is a yellowish-white, amorphous powder, soluble in water and alcohol, insoluble in ether and chloroform. It is said to contain about 50-60 per cent. of digitonin and 5-6 *per cent. of digitalinum* verum, the remainder being digitalein and other glucosides.

Sulphuric acid containing a trace of ferric sulphate produces with digitalin, German, an intense golden-yellow coloration, changing to red and finally to a permanent reddish-violet.

Action and Uses.—Similar to those of digitalis.

Dosage.—0.001 to 0.002 Gm. (1/60 to 1/30 grain). Maximum dose 0.004 Gm. (1/16 grain): maximum per day, 0.02 Gm. (⅓ grain). Doses of from 1/10 to ⅓ grain, and even higher, have been used by some clinicians.

As German digitalin (so-called digitalinum purum) is a mixture of very powerful active principles, the proportion of which may vary with changes in the manipulations, it is very important that the directions for its preparation should be very carefully followed, and caution should be exercised to purchase only such products as the manufacturers can guarantee to have been made with the necessary care.

DIGITONIN.[1]—Digitonin is a glucoside $C_{27}H_{48}O_{14} + 5H_2O$ *derived from the seeds of digitalis purpurea and belonging to* the saponins.

Digitonin is separated from German digitalinum purum by the addition of ether to the alcoholic solution (see digitalin). The *precipitate is dissolved in 10 parts of 85 per cent. alcohol* and the solution put into water at 45° C. After standing from six to eight hours the greater part of the digitonin will crystallize out.

Digitonin crystallizes in colorless needles or thick warty masses which dissolve in 600 parts of cold water and 50 parts of warm water to a turbid solution, but dissolves to a clear solution in 50 parts of 50 per cent. alcohol. Its solutions are levorotatory. When heated in alcoholic solution with hydrochloric acid it is split into dextrose, galactose and digitogenin.

Concentrated sulphuric acid dissolves it with a red color which is intensified by the addition of a drop of bromine water.

Concentrated hydrochloric acid dissolves digitonin without color, but the solutions become yellow and finally reddish violet on heating or on long standing.

Keller's reaction gives a rose red zone which soon fades.

Action and Uses.—Digitonin acts as a heart depressant when introduced into the circulation, but it is not absorbed from the alimentary canal, and therefore exerts no action on the circulation when taken by the mouth, but it renders digitoxin more soluble whether in infusion or when the leaf is taken by the mouth.

DIGITOXIN—Digitoxinum.—Digitoxinum (Pharm. Helvetica, edit. 4). Digitaline Crystallinée (Pharm. Française, 1908). Digitoxin, $C_{34}H_{54}O_{11}$ is the chief active principle of digitalis, having the character of a glucoside.

The leaves of Digitalis purpurea having been extracted with water and dried, are extracted with 50 per. cent. alcohol. This solution is treated with lead acetate, forming a precipitate, which is allowed to settle. The supernatant liquid is decanted. The remaining alcohol is evaporated *in vacuo* and the residue repeatedly extracted with ether. The ether extract is then shaken out with water and concentrated by distillation and the residue recrystallized from hot alcohol (85 per cent.) and decolorized by boiling with animal-charcoal (Schmidt's Pharm. Chemie, 3d edit., Vol. II, p. 1640).

Depending on the solvent from which it is crystallized, it is either hydrated on anhydrous. The hydrated form is obtained when crystallized from alcohol and the anhydrous from chloro*form and* alcohol mixture, forming colorless rectangular leaflets melting at 243° C. (470° F.) (Pharm. Française, 1908). The anhydrous preparation is official in the Pharm. Française, 1908.

It is insoluble in water, benzin or carbon disulphide, slightly soluble in ether and easily soluble in chloroform. At 15° C. it is soluble in 79.80 parts of absolute alcohol and in 43.04 parts of 90 per cent. alcohol. It is slightly soluble in fatty oils (Pharm. Française, 1908).

Digotoxin dissolved in 2 Cc. glacial acetic acid containing a trace of ferric chloride when poured onto 2 Cc. of concentrated sulphuric acid containing a trace of ferric chloride, will produce a brown color at the zone of contact of the two solutions. This color gradually changes to green and finally an indigo blue; after one-half hour the entire acetic acid layer will become blue. (Pharm. Française, 1908).

It dissolves to a colorless solution in cold concentrated hydrochloric acid, but when this solution is heated on the water bath for some time a green color is obtained. Concentrated sulphuric acid dissolves it, producing a green color.

It should not lose weight appreciably when heated to 100° C. It should be insoluble in water and in benzin, but completely soluble in chloroform. It should leave no residue when ignited (Pharm. Française, 1908).

Action and Uses.—Digitoxin acts much like digitalis. Its activity varies with the method of preparation. Digitoxin from an unknown source should be tested on animals before it is used on patients. Owing to its slow excretion, it is cumulative in action when too frequently repeated. Locally it is very irritant, and when given by mouth is liable to derange the digestion. Penzoldt claims that gastric irritation may be avoided by giving it only when the stomach is full. Owing to its irritant action it is not suitable for hypodermic injection.

Dosage.—Single dose 0.00025 (1/250 grain); maximum daily dose 0.0010 Gm. (1/67 grain). It should be given largely diluted and repeated cautiously.

Antidotes: Emetics, tannin, nitroglycerin, morphine, alcoholic stimulants or camphor.

DOLOMOL.—Dolomol is magnesium stearate, $Mg(C_{18}H_{35}O_2)_2$, containing small amounts of magnesium palmitate and oleate.

It is a white powder, insoluble in water, unctuous to the touch, nearly odorless and tasteless. It is claimed to be practically free from oleate. Its magnesium content corresponds to nearly 7 per cent. MgO.

Actions, Uses and Dosage.—Acting as a protective to the skin, Dolomol is employed in cutaneous affections as a dusting powder, alone or mixed with various remedies.

The following dolomol compounds are listed: Dolomol-Acetanilid, 25 per cent.; Dolomol-Acid Boric, 20 per cent.; Dolomol-Acid Carbolic, 5 per cent.; Dolomol-Acid Picric, 25 per cent.; Dolomol-Acid Pyrogallic, 5 per cent.; Dolomol-Acid Salicylic, 5 per cent.; Dolomol-Acid Salicylic, 10 per cent.; Dolomol-Acid Tannic, 10 per cent.; Dolomol-Alum, 10 per cent.; Dolomol-Aristol, 10 per cent.; Dolomol-Balsam Peru, 10 per cent.; Dolomol-Bismuth Subgallate, 25 per cent.; Dolomol-Calendula, 25 per cent.; Dolomol-Calomel, 25 per cent.; *Dolomol-Camphor*, 10 per cent.; Dolomol-Chrysarobin, 5 per cent; *Dolomol-Europhen*, 10 per cent.; Dolomol-Guaiacol, 5 per cent.; Dolomol-Ichthyol, 10 per cent.; Dolomol-Iodoform Deodorant, 10 per cent.; Dolomol-Menthol, 5 per cent.; Dolomol-Naphthol, 5 per cent.; Dolomol-Oil of Cade, 10 per cent.; Dolomol-Resorcin, 10 per cent.; Dolomol-Salol, 10 per cent.; Dolomol-Sulphur Sub., 25 per cent.; Dolomol-Tar, 10 per cent; Dolomol-Thymol, 2 per cent.

Manufactured by Pulvola Chemical Co., New York. Not patented or trademarked.

EMETINE HYDROCHLORIDE—Emetinæ Hydrochloridum.—Methyl-cephaeline. Emetine hydrochloride is the hydrochloride, $C_{15}H_{22}N.O_2.HCl.3H_2O$, of a base found together with cephaeline in Cephaelis Ipecacuanha.

Emetine hydrochloride occurs as a white crystalline powder, soluble in water and alcohol. A freshly prepared concentrated solution of ammonium molybdate in concentrated sulphuric acid is colored brown by emetine; this color changes to violet when a drop of concentrated hydrochloric acid is added. The general alkaloidal reagents precipitate emetine, even from dilute solutions. Alkalies precipitate emetine from aqueous solutions of its salts.

Actions and Uses.—Emetine acts similarly to Ipecac but is relatively more nauseant and less emetic, and causes relatively less renal irritation, but more cardiac depression.

Dosage.—Expectorant, 0.005-0.01 Gm. (1/12-1/6 grain). 0.01-0.02 Gm. (1/6-1/3 grain) causes emesis, but cephaeline is preferred as an emetic.

EMPYROFORM.—Empyroform is a condensation of birch tar and formaldehyde.

According to the patent specifications birch tar is boiled with formaldehyde solution and the hot liquid poured into hydrochloric acid. When cold, the solid mass is collected and washed until *free from acid.*

It is a grayish-brown, almost odorless powder, insoluble in water, but soluble in acetone and chloroform.

Actions and Uses.—Empyroform is an antipruritic, sedative *and desiccant.* It is said to be superior to tar and free from irritant or toxic effects. See note under Creosote Carbonate.

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[1] Crystallized digitalin—Merck.

It is claimed to be useful in all stages of eczema, psoriasis, lichen, urticaria, prurigo, pityriasis, etc.

Dosage.—It is applied as a 5 to 10 per cent. ointment, 10 to 20 per cent. zinc paste, 10 to 20 per cent. tincture, and 37.5 per cent. suspension.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 761,260 (May 31, 1904; expires 1921). U. S. trademark No. 43,419.

EPICARIN.—Oxynaphthyl-Ortho-Oxytoluic Acid.—Epicarin, $C_6H_3(OH)(COOH)(CH_2C_{10}H_6OH)2:3:1 = C_{18}H_{14}O_4$, is β-naphthol-hydroxy-toluic acid.

It is obtained by the action of chlormethyl-salicylic acid on a solution of *b*-naphthol, in glacial acetic acid, thus:

$$C_6H_3(OH)\ (COOH)\ (CH_2Cl + C_{10}H_7OH = C_6H_3(OH)\ (COOH)\ (CH_2C_{10}H_6OH) + HCl$$

It forms colorless or yellowish needles, melting at 190° to 195° C. (380° to 389° F.) difficultly soluble in water, but easily soluble in alcohol, ether, acetone, and in soaps. It dissolves in oils on the addition of a little ether. It has the character of a strong acid, forming well crystallized salts, which, however, are sparingly soluble in water, particularly the sodium salt. On exposure to air it acquires a reddish color due to oxidation; if it is then recrystallized from glacial acetic acid, colorless crystals are again obtained which melt at 166° C. (338° F.). These, however, retain a little acetic acid, but lose this by heating at 120° C. (248° F.).

The alcoholic solution of epicarin produces an intense blue color with ferric chloride. When heated with concentrated sulphuric acid, a red-brown solution, having a vivid green fluorescence, is produced. If shaken with chloroform and solution of potassium hydroxide, a yellowish color, changing later to yellowish green, is developed, thus distinguishing epicarin from *b*-naphthol, which produces a deep blue color under the same conditions.

Being a strong acid, it is incompatible with alkaline hydroxides or carbonate, especially those of sodium, with which it forms an almost insoluble salt. It should not be exposed to the air, which colors it red.

Actions and Uses.—Epicarin is a non-poisonous antiseptic and parasiticide. Administered internally, it is excreted mostly undecomposed. It is said to be useful in the treatment of skin diseases, particularly scabies, tinea tonsurans, prurigo and certain forms of eczema. (See note under Creosote Carbonate.)

Dosage.—It is used only externally in the form of a 5 to 20 per cent. ointment, with petrolatum or wool fat (lanolin) as base, or in the form of oily or alcoholic solutions (10 per cent).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 671,622 (April 9, 1901; expires 1918).

EPINEPHRINE PREPARATIONS

EPINEPHRINE.—Epinephrine is 1, 2-dihydroxy-4^2-methyl-amino ethyl-4^1-ol benzene, $C_6H_3(OH)_2(CHOH.CH_2NHCH_3)$, a substance with feeble basic properties, obtained from the suprarenal gland of the sheep or other animal.

Epinephrine is a finely crystalline white or yellowish powder, odorless and slightly bitter. It melts at 201 to 207° C. (401 to 404° F.), turning brown and decomposing at the higher temperature.

The alkaloid shows a slightly alkaline reaction to moistened red litmus paper. It is almost insoluble in cold water, more readily in hot water. It is difficultly soluble in alcohol and insoluble in ether. The colorless aqueous solution of the alkaloid is easily oxidized on contact with the air, becoming pink, then red, and eventually brown. The base reacts with acids to form salts which are readily soluble in water; it is also soluble in the fixed alkalies, but not in ammonium hydroxide or in solutions of the alkaline carbonates. The following reactions are the most characteristic: The addition of ferric chloride to a solution of the alkaloid produces a beautiful emerald green color which by careful addition of caustic alkali becomes purple, and then carmine red. Strong acid prevents the reaction with ferric chloride, limiting the change of color to a dirty yellowish-green. It gives a vivid pink color with iodine. The alkaloid reduces silver salts and gold chloride very energetically, and the liquid turns red. A drop of 1:10,000 solution instilled into the eye will, within a few seconds, produce a pallor of the conjunctiva.

Its incompatibilities are the same as those of other alkaloids. Its solutions should be kept tightly stoppered and protected from the light.

Actions and Uses.—Epinephrine acts peripherally on a variety of structures, probably by stimulating the sympathetic nerve endings. Its most important therapeutic actions consist in a constriction of the blood vessels, with consequent high rise of blood pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant and tonic effect on the heart muscle, similar to digitalis. Large doses also cause glycosuria. Continued administration of large doses leads to atheroma. The effect of a single dose is very fleeting. It is not irritant. The effects are seen on local application and intravenous and intramuscular injection. When given to animals, by mouth or hypodermically, moderate doses have almost no action.

Dilute watery solutions rapidly lose their strength, the deterioration being accompanied by a reddish or brownish discoloration.

The alkaloid is used mainly locally for its vasoconstrictor action, in hemorrhage, and in catarrhal and congestive conditions. It is said to cut short the asthmatic paroxysm (being used by spraying the larynx and by hypodermic injections). Intravenous injections are effective in shock and anesthesia accidents (care being taken not to give an overdose). It has also been recommended in heart disease, Addison's disease, etc., but opinions are divided as to the benefits to be expected from oral administration.

The vasoconstrictor action of epinephrine is used to intensify and prolong the anesthetic effect of local anesthetics by retarding the circulation in the affected part and thus hindering the dilution of the anesthetic agent by too rapid absorption into the general blood stream.

Dosage.—0.3 to 2.0 Cc. (5 to 30 minims) of a 1:1,000 solution every two or three hours. Hypodermically, 0.06 to 1 Cc. (1 to 15 minims) of a 1:1,000 solution, diluted with sterile water. Locally it is used in solution varying in strength from 1:15,000 to 1:1,000, for ordinary applications, in oily solution for sprays, in ointment for application to mucous membranes, such as the eye or the nose, where a slower but more lasting action is desired and in suppositories. Since the alkaloid is insoluble, solutions in water should be made of some salt, but for the oily solutions the alkaloid itself should be employed.

Proprietary Preparations:

ADNEPHRIN.—The name used for epinephrine by F. Stearns & Co., Detroit, Mich.

Adnephrin Emollient.—An ointment composed of adnephrin and a neutral base (1:1,000).

Adnephrin Oil Spray.—A 1:1,000 solution of adnephrin in a neutral oil, aromatized.

Adnephrin Solution.—A sterile solution (1:1,000 of adnephrin in physiologic salt solution containing one-half of 1 per cent. of methaform (chlorbutanol). A small proportion of sodium sulphite is added to the extraction of the glands.

Adnephrin Suppositories.—Each suppository represents a 1 to 1,000 with oil of theobroma and weighs about

ADRENALIN.—The name used for epinephrine by Parke, Davis & Co., Detroit, Mich. It is prepared by the method of Takamine.

For Tests, Incompatibilities, Actions and Uses see Epinephrine. U. S. patents Nos. 730,175, 730,176, 730,196, 730,197, 730,198 (June 2, 1903; expires 1920); 753,177 (Feb. 23, 1904; expires 1921). U. S. trademark.

Adrenalin Chloride Solution.—A 1:1,000 solution of adrenalin hydrochloride in physiologic salt solution, preserved by the addition of 0.5 per cent. of chloretone (chlorbutanol).

Adrenalin Inhalant.—A neutral oily solution containing adrenalin chloride 1:1,000, 3 per cent. of chloretone, 13 per cent. of alcohol, and aromatics.

Adrenalin Ointment.—One part of adrenalin chloride in 1,000 parts of oleaginous ointment base.

Adrenalin and Chloretone Ointment.—Contains 0.1 per cent. of adrenalin chloride, and 5 per cent. of chloretone in an ointment base of hydrous wool fat and petrolatum.

Adrenalin Suppositories.—1 part of adrenalin to 1,000 parts of oil of theobroma (cacao butter). Each suppository weighs about 1 Gm. (15 grains).

Adrenalin Tablets.—Each tablet contains 0.001 Gm. (3/200 grain) adrenalin, as borate, yielding a 1:1,000 solution when dissolved in 15 minims (1 Cc.) of water.

Adrenalin and Cocaine Tablets.—Each hypodermic tablet contains cocaine hydrochloride 0.01 Gm. (1/6 grain), and adrenalin, as borate, 0.0002 Gm. (1/300 grain).

ADRIN.—The name (word mark) used for epinephrine by H. K. Mulford Co., Philadelphia. It is prepared by the method of von Fuerth (Zeit. f. physiol. chem., vol. 26, p. 18). It is not marketed in its pure form. All the preparations contain boric acid.

U. S. trademark No. 41,916.

Adrin Compound Vaginoids.—Vaginal Suppositories of Epinephrine Compound, Mulford. Each suppository contains adrin 0.00065 Gm. (1/100 grain), ichthyol 0.13 Cc. (2 minims), phenol 0.13 Gm. (2 grains), zinc phenolsulphonate 0.08 Gm. (1¼ grains) in a boroglyceride and gelatin base and weighs about 7.63 Gm. (118 grains).

Adrin Inhalant Comp.—Epinephrine Inhalant Comp., Mulford. —Each 100 Cc. contains epinephrine (as hydrochloride), 0.1 Gm. (7/16 of a grain in a fluidounce), camphor, 0.3 Gm. (1 1/3 grains in a fluidounce), menthol 0.22 Gm. (1 grain in a fluidounce), thymol, 0.043 Gm. (1/5 of a grain in a fluidounce), oil of eucalyptus, 0.22 Gm. (1 minim in a fluidounce), and hydrastine, 0.0053 Gm. (1/40 of a grain in a fluidounce), oil of wintergreen, 0.99 (4.5 minims in a fluidounce). The solvent is a mixture of castor and cotton seed oils, together with 10 per cent. absolute alcohol by volume.

Adrin Troches.—Troches of E[illegible] troche contains epinephrine, 0.000033 [illegible] 0.0013 Gm. (1/50 grain), benzoic acid, [illegible], oil of gaultheria, 0.0034 Gm. (1/20 grain), and eucalyptol, 0.0013 Gm. (1/50 grain). The base is sugar with a small amount powdered acacia.

Adrin Ointment.—Ointment of Epinephrine, Mulford. An ointment containing 0.1 per cent. each of adrin and boric acid in a base of petrolatum and anhydrous wool fat, flavored with oils of wintergreen and eucalyptus.

Adrin Solution 1:500.—Solution of Epinephrine, 1:500, Mulford. A solution of adrin, 1 to 500, in normal salt solution, containing boric acid, 0.25 per cent., and also small quantities of sulphite and chloroform.

Adrin Suppositories.—Suppositories of Epinephrine, Mulford. Each suppository contains adrin 0.0027 Gm. 1/25 grain) and oil of theobroma, 1.23 Gm. (19 grains).

Adrin Tablets, 1/65 grain.—Tablets of epinephrine, 1/65 grain, Mulford. Each tablet contains adrin, 0.001 Gm. (1/65 grain); sodium chloride, 0.007 Gm. (1/10 grain); boric acid, 0.002 Gm. (1/33 grain). A 1:1,000 solution is prepared by dissolving a tablet in 1 Cc. (16 minims) of water. The tablets can be used hypodermically.

Adrin Tablets, Hypodermic, 1/100 grain.—Tablets of Epinephrine, hypodermic, 1/100 grain, Mulford. Each tablet contains adrin 0.00065 Gm. (1/100 grain) and represents 0.6 Cc. (10 minims) of the 1:1,000 solution.

Adrin Tablets, Hypodermic, 1/200 grain.—Tablets of Epinephrine, 1/200 grain, Mulford. Each tablet contains adrin 0.00033 Gm. (1/200 grain) and represents 0.3 Cc. (5 minims) of the 1:1000 solution.

Adrin and Cocaine Tablets. Tablets of Epinephrine and Cocaine, Mulford. (For dental practice). Each tablet contains adrin, 0.00065 Gm. (1/100 grain) and cocaine hydrochloride, 0.016 Gm. (¼ grain).

Adrin and Sparteine Tablets, Hypodermic.—Tablets of Epinephrine and Sparteine, Hypodermic, Mulford. Each tablet contains adrin 0.00033 Gm. (1/200 grain) and sparteine sulphate, 0.008 Gm. (⅛ grain).

SUPRACAPSULIN.—The name used for epinephrine by The Cudahy Packing Co., South Omaha, Neb.

Not patented. U. S. trademark No. 72,580.

Supracapsulin Solution.—A solution 1:1,000 of supracapsulin in normal salt solution with small quantity of sulphite and 0.5 per cent. of chloral.

Supracapsulin Inhalant.—A solution 1:1,000 of supracapsulin in an aromatized neutral oil, containing approximately 2.5 per cent. of chloral and 10 per cent. of alcohol.

SUPRARENALIN.—The name used for epinephrine by Armour & Co., Chicago.

An organic base is used for the the final precipitation.

U. S. patent No. 829,220 (Aug. 21, 1906; expires 1923).

Suprarenalin Inhalant.—A 1:1,000 solution of suprarenalin in an aromatized oil, containing approximately 10 per cent. of alcohol.

Suprarenalin Ointment.—An ointment containing 0.1 per cent. of suprarenalin, dissolved in a petrolatum base.

Suprarenalin Solution.—A 1:1,000 solution of suprarenalin sulphite in normal saline solution, free from other preservatives.

Suprarenalin Triturates.—Triturates composed of suprarenalin, milk sugar, and boric acid, in such proportion that each 0.03 Gm. (½ grain) triturate dissolved in 15 minims of water, yields a 1:1,000 solution.

L-SUPRARENIN SYNTHETIC.—L-suprarenin synthetic is epinephrine produced synthetically according to the method of Stolz & Flaecher (*Ztschr. f. physiol. Chem.*, 58, p. 189).

L-suprarenin synthetic is a white odorless powder nearly insoluble in water, alcohol and ether. It melts at 211°-212°. It has the power of rotating polarized light to the left:—

$$[a]\frac{19.6^\circ}{D} = -51.4^\circ$$

L-suprarenin synthetic has the chemical and physical properties and physiologic effect of natural epinephrine obtained from suprarenal glands.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.) German patent No. 222,451.

L-SUPRARENIN SYNTHETIC BITARTRATE.—L-suprarenin synthetic bitartrate is the acid tartrate of l-suprarenin synthetic.

It is a white odorless powder readily soluble in water yielding an acid solution. It melts at 149° and rotates polarized light to the left.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York). German patent No. 222,45

SUPRARENAL LIQUID—Liquor Suprarenalis (P. D. & Co.). —Suprarenal liquid is an aqueous extract of suprarenal glands, preserved with 0.8 per cent. of chlorbutanol (chloretone). Each Cc. (16 minims) of the solution represents 1 Gm. (15.4 grains) of the fresh glands.

Dosage.—The preparation is used undiluted for spraying, especially for mucous membranes.

Prepared by Parke, Davis & Co., Detroit, Mich.

ERGOTININE CITRATE—Ergotininæ Citras.—The citrate of ergotinine, a crystalline alkaloid, probably $C_{35}H_{39}O_5N_5$, (Barger and Carr) derived from ergot.

Ergotinine is obtained by extracting the residue left on evaporation of an alcoholic tincture of ergot with light petroleum to remove oily matter, dissolving the residue in ethyl acetate and shaking with citric acid solution. Sodium bromide or hydrobromic acid is then added and the precipitated hydrobromides of the alkaloids, ergotinine and ergotoxin are collected. The mixed hydrobromides are dissolved in caustic soda and shaken with ether; in this way ergotinine is removed first. Finally, the ergotinine is crystallized from alcohol, leaving ergotoxine and impurities in the mother liquor. By interaction of ergotinine with citric acid, ergotinine citrate is obtained.

Ergotinine citrate is a grayish-white, amorphous powder, slowly soluble in water; it has an acid reaction to litmus paper.

Ergotinine crystallizes in long needles, the sides of which are not quite parallel, which darken and melt at temperatures from 219° to 229° C. One part of ergotinine dissolves at 18° in 292 parts of alcohol, 1,020 parts of absolute ether, in 91 parts of ethyl acetate, and is moderately soluble in acetone and benzene, and readily soluble in chloroform. It is insoluble in light petroleum and in water. Its specific rotation in alcoholic solution saturated in the cold is + 338°. It forms salts which produce colloidal solutions in water which are precipitated by electrolytes so that they are little soluble in the presence of the stronger mineral acids.

Tests: Ergotinine citrate when carefully decomposed by alkali, the mixture extracted with ether and the ether evaporated yields a residue which responds to the test for ergotinine. Solutions of ergotine have a bluish violet fluorescence, especially when acidified. Concentrated sulphuric acid colors the alkaloid at first yellow, after some hours violet and at length blue. If a small quantity of ergotinine is dissolved in concentrated sulphuric acid and a trace of ferric chloride added, the mixture takes on an orange red coloration, which soon passes into red while the edges of the liquid are colored blue or bluish green.

If a few milligrams of ergotinine are dissolved in about 4 Cc. of glacial acetic acid a trace of ferric chloride added and the mixture underlaid with concentrated sulphuric acid a beautiful violet color appears at the junction of the two liquids.

Actions and Uses.—According to the investigations of Barger and Dale, ergotinine has very slight physiologic activity when it enters the system unchanged, but it is liable to be converted to a certain extent into ergotoxine, which possesses marked physiologic activity and appears to represent the pharmacologic actions of ergot. The action of ergotinine when given per os or when injected hypodermically, is variable in intensity but represents the action of ergot.

Ergotinine citrate can be used as a substitute for ergot, and is said to act efficiently, when injected hypodermically, in the treatment of headaches and of uterine hemorrhage. Combined with strychnine it is said to be useful as a stimulant in uterine hemorrhage.

Dosage.—.00032 to .00064 Gm. (1/200 to 1/100 grain), hypodermically.

Proprietary Preparations:

TABLOID ERGOTININE CITRATE—Tabloid Ergotininæ Citratis.—Each tablet contains ergotinine citrate 0.00032 Gm. (1/200 grain).

Dosage.—One or two, hypodermically.

Prepared by Burroughs, Wellcome & Co., London, England, and New York. U. S. trademark on "Tabloid" Nos. 11,993, 43,563, 43,559, 43,569, 44,219.

TABLOID ERGOTININE CITRATE AND STRYCHNINE SULPHATE.—Tabloid Ergotininæ Citratis et Strychninæ Sulphatis.—Each tablet contains ergotinine citrate 0.00065 Gm. (1/100 grain) and strychnine sulphate 0.0032 Gm. (1/20 grain).

Dosage.—One or two, hypodermically.

Prepared by Burroughs, Wellcome & Co., London, England, and New York. U. S. trademark, as for Tabloid Ergotinine Citrate.

EXTRACT OF ERGOT, PURIFIED — Extractum Ergotæ Purificatum.—Ergotin Bonjean. Extractum secalis cornuti (Pharm. Helvetica, edit. 4); Extractum ergoti (Pharm. Française, 1908). Purified extract of ergot is an aqueous extract of ergot purified by alcohol.

Powdered ergot is extracted by percolation with water and the percolate concentrated, diluted with alcohol, allowed to stand, then filtered and the filtrate evaporated to a soft extract.

It is reddish brown, of characteristic odor and taste, soluble in water and in a mixture of equal parts of water and alcohol. The aqueous solution is yellowish brown and acid in reaction (Pharm. Helvetica, edit. 4).

If 2 Cc. of an aqueous solution (1:20) is mixed with 7 Cc. of water and 1 Cc. Mayer's reagent there should appear at most but slight turbidity; the turbidity is increased by the addition of a trace of hydrochloric acid; the further addition of 5 drops of dilute acid produces within a few minutes a flocculent precipitate.

10 Cc. of a 1:20 *solution of purified* extract of ergot should become turbid upon the addition of 1 Cc. picric acid solution and precipitation should occur within five minutes.

If a solution of 0.2 Gm. purified extract of ergot in 5 Cc. water is made alkaline with 1 to 2 drops of ammonia water and then shaken out with ether, the ether extract evaporated and the residue dissolved in 2 Cc. acetic acid to which a trace of ferric chloride has been added and the mixture carefully poured upon concentrated sulphuric acid, a bluish violet color appears at the zone of contact (Pharm. Helvetica, edit. 4).

Action and Uses.—Purified extract of ergot has the action and uses of ergot.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains).

This preparation should not be confused with the following:

Ergotin Wernich (Pure Dried) is a purified and dialyzed dried aqueous extract of ergot.

Ergotin Wernich (Liquid) is a dialyzed extract of ergot, in the form of a reddish brown liquid.

Ergotin Wernich (Soft) is a purified and dialyzed soft extract of ergot; a reddish brown syrupy liquid.

Ergotin Wiggers (Pure Dried) is a dried, alcohol purified extract of ergot.

Ergotin Yvon is a fluidextract of ergot prepared by extracting with dilute solution of tartaric acid.

ERYTHROL TETRANITRATE.—Tetranitrol.—Erythrol tetranitrate, $C_4H_6(NO_3)_4 = C_4H_6O_{12}N_4$, is the tetranitrate of erythrite (butane-tetrol) $C_4H_6(OH)_4$.

It is obtained by the nitration of the tetratomic alcohol erythrite.

It forms colorless crystalline scales, insoluble in cold water, readily soluble in alcohol, melting at 61° C. (141.8° F.). On percussion it expodes much like nitroglycerin.

Actions and Uses.—It is a vasodilator and antispasmodic, like nitroglycerin. Its action is slower and more lasting; it begins in 15 minutes and persists for three or four hours.

It is said to be useful in angina pectoris and vascular diseases. It is reported as especially useful as a prophylactic in preventing anginal pain.

Dosage.—0.03 to 0.06 Gm. (½ to 1 grain) every four to six hours. Because of its explosiveness it is best dispensed in tablets.

Proprietary Preparations:

ERYTHROL TETRANITRATE TABLETS, Merck. Each tablet contains erythrol tetranitrate 0.03 Gm. (½ grain).

Prepared by E. Merck, Darmstart, Germany (Merck & Co., New York). German patent No. 81.664.

ETHYL AMINOBENZOATE.—Aethylis Amino-Benzoas.—Paramidobenzoic Acid Ethyl Ester.—Ethyl aminobenzoate, $C_6H_4NH_2COO(C_2H_5)$ 1:4, is the ethyl ester of paraminobenzoic acid, $C_6H_4NH_2COOH$, 1:4.

Paranitrobenzoic acid is obtained by the oxidation of paranitrotoluene, and this *may be ethylized* by the action of sulphuric acid and alcohol and the ester so obtained reduced *to* paramidobenzoic acid ethyl ester by the action of zinc and *hydrochloric* acid, or the acid may first be reduced and subsequently converted into the ethyl ester.

It is a white, crystalline powder, easily reduced to impalpability, melting at 90° to 91° C. *(194° to* 195.8° F.); odorless and tasteless, but producing a sensation of numbness when placed on the tongue; *almost insoluble* in cold and difficultly soluble in hot water; soluble in *six parts of alcohol*, in ether, benzene and to the amount of 2 to 3 per cent. in fatty oils. In oil solutions it may be *sterilized* without decomposition, but by prolonged boiling or by warming with dilute alkalies it is split up into alcohol and paramidobenzoic acid.

It should form clear, colorless and neutral solutions in alcohol or ether; after acidification with *nitric acid* it should not give a precipitate with silver nitrate. Its solution in dilute hydrochloric acid (1 to 10) is not *affected* by *hydrogen* sulphide. If a few drops of sodium nitrate solution be added to the slightly acidulated aqueous solution followed by some alkaline betanaphthol solution, a cherry red *coloration* of bluish shade is produced, which changes to orange on *further addition* of hydrochloric acid. It is decomposed by prolonged heating with water and is incompatible with alkalies and their carbonates.

Action and Uses.—It was introduced as a substitute for cocaine and is a local *anesthetic, similar* in its action to orthoform and said to be equally *effective*, but free from irritant action and toxicity. The anesthetic action, like that of the related compound orthoform, resembles that of cocaine, but is purely local, does not penetrate the mucous membranes, and in consequence of its insolubility the compound cannot be used by hypodermic injection. In consequence of its insolubility the anesthetic effect is more prolonged than that of cocaine.

It is said to be useful in various forms of gastralgia, in ulcer and cancer of the stomach for the relief of pain, and is applied locally in rhinologic and laryngeal affections, urethritis, etc.; it is also employed for anesthetizing wounded surfaces, burns, ulcerations and painful affections of the skin. It is more effective in cases where the skin is broken.

Dosage.—Internally, 0.3 to 0.5 Gm. (5 to 8 grains), in pastilles. Externally it is applied as a dusting powder, either pure or diluted. It may be applied in ointment or in the form of suppositories.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). German patents Nos. K 19,416 Onm.

ETHYL BROMIDE—Aethylis Bromidum.—Aether Bromatus (Pharm. Germanica, edit. 4; Pharm. Belgica, edit. 4; Pharm. Helvetica, edit. 4). Aethylium bromatum (Pharm. Française, 1908).

Ethyl bromide, C_2H_5Br, is the hydrobromic acid ester of ethyl alcohol, containing approximately 1 per cent. ethyl alcohol.

Ethyl bromide is a colorless, strongly refractive, easily volatile liquid, having a pleasant ethereal odor. It is insoluble in water, but readily soluble in alcohol and in ether. It boils at from 38° *to* 40° C. (101° to 104° F.). Its specific gravity at 15° is 1.453 to 1.457 (Pharm. Germanica).

It is stable when pure, but when contaminated with ethyl iodide it becomes colored when exposed to light. It burns with difficulty. It is very difficultly saponified by potassium hydroxide and it is not attacked by sulphuric or nitric acids. Silver nitrate gradually precipitates silver bromide (Pharm. Française, 1908). If a mixture of 1 Cc. ethyl bromide, 5 Cc. alcohol and 10 drops of (15 per cent.) sodium hydroxide solution is heated to boiling, cooled, acidified with dilute sulphuric acid, then shaken with chloroform and chlorine water added a brown coloration will be produced in the chloroform layer. If equal volumes of ethyl bromide and sulphuric acid are shaken together in a bottle previously rinsed with sulphuric acid and closed with a *glass* stopper, the acid should not be colored yellow within an hour. *After shaking equal volumes* of ethyl bromide and water, no change of volume should occur in the two liquids, the water separated from the ethyl bromide should not have an acid reaction nor should it become turbid immediately on the addition *of a* drop of silver nitrate solution (Pharm. Helvetica).

When a small portion is evaporated from a porcelain plate by causing it to flow to and fro over the surface little or no foreign odor *is yielded as* the last-portions pass off, and the plate is covered with a slight deposit of moisture.

1 Cc. of ethyl bromide mixed with 3 drops of anilin and 2 Cc. of alcoholic solution of potassium hydroxide should not give *off* the *odor* of isonitrile even after warming. (Absense of chloroform) (Pharm., Belgica.)

About 1 Gm. of ethyl bromide accurately weighed added to 30 Cc. of 80 per cent. alcohol containing 2 Gm. silver nitrate will precipitate, after several hours, silver *bromide*, which when washed and dried should weigh 1.72 Gm. for each Gm. ethyl bromide used (Pharm. Française).

Action and Uses.—Ethyl bromide is a rapid anesthetic, acting much like chloroform. The anesthesia is quickly and pleasantly induced and the recovery *is rapid*, but subsequently the patient may have general mild depression. Pain is abolished before consciousness. The respiration is paralyzed at about the same time as the reflexes, so that the zone of safety is very narrow. Tetanic spasms have occurred. Deaths were formerly attributed to impurities, but several have occurred when a pure article was given. It has been recommended for short operations in obstetrics, gynecology and *minor* surgery, but is not to be used for long operations. It must be regarded as a very dangerous agent in inexperienced hands.

Dosage.—3 Cc. to 12 Cc. (45 minims to 3 fluidrams) is sufficient *to induce* anesthesia. It should be administered rapidly with little or no air. The administration requires from 20 to 40 seconds; the anesthesia lasts about two *minutes*. The dose for children should not exceed 1 Cc. per year *of* age.

It should be protected from the *light and* a *bottle once* opened should be used at once, as it *deteriorates* rapidly. (To be preserved carefully in small, opaque bottle containing not more than 50 Cc. Pharm. Helvetica, edit. 4.) *It should* not be confounded with ethylene bromide, which is said to be very poisonous. The Sp. Gr. of ethylene bromide is 2.179, while that of ethly bromide is about 1.45

ETHYL CARBAMATE

Ethyl Carbamate is official in the United States Pharmacopeia. For description see the Pharmacopeia or the Physician's Manual of the Pharmacopeia and National Formulary.

URETHANE.—A name applied to Æthylis Carbamas, U. S. P.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

URETHAN-Hoechst.—A name applied to Aethylis Carbamas, U. S. P.

Manufactured by Farbwerke. vorm. Meister Lucius & Bruening, Hoechst a. M., Germany (Victor Koehl & Co., New York). Not patented or trademarked.

ETHYL CHLORIDE

Ethyl Chloride is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physician's Manual of the Pharmacopeia and National Formulary.

KELENE.—A name applied to Æthylis Chloridum, U. S. P., supplied in a special form of container.

Manufactured by Fries Bros., New York.

ETHYL SALICYLATE—Æthylis Salicylas.—Ethyl salicylate $C_6H_4.OH.COO(C_2H_5)=C_9H_{10}O_3$. is the salicylic acid ester of ethyl alcohol and is analogous to methyl salicylate (oil of wintergreen).

It is made by the action of salicylic acid on ethyl alcohol in the presence of sulphuric acid and subsequent purification.

It is a transparent, colorless, volatile liquid, possessing a pleasant characteristic odor and taste. Its sp. gr. is 1.184 at 20° C. (68° F.) and it boils at 231.5° C. (448.7° F.). It is insoluble in water, but soluble in alcohol.

Actions and Uses.—Ethyl salicylate has the same action as the salicylates, but is said to be less toxic.

Dosage.—3 to 6 c.c. (5 to 10 minims) 3 or 4 times a day.

Proprietary Preparation:

SAL ETHYL.—A name applied by Parke, Davis & Co., Detroit, Mich., to their preparation of ethyl salicylate, which is marketed in gelatin globules containing 0.33 Cc. (5 minims) each. U. S. trademark.

ETHYLENEDIAMINE. — Æthylendiamin — Æthylene Diamine — Ethane Diamine — *a.b.*Diamino-Ethane. — Ethylenediamine. is 1,2-diamino-ethane, $CH_2(NH_2).CH_2(NH_2)=C_2H_8N_2$.

It is prepared by heating 1.2-dibrom-ethane, ethylene bromide, with an excess of alcoholic ammonia, for 12 hours at 100° C. (212° F.), removing the ammonium bromide formed by filtration, evaporating the filtrate to dryness, distilling the residue with potassium hydroxide, and collecting the fraction distilling between 115° and 130° C. (239° to 266° F.) and bringing the liquid by successive purifications to a constant boiling point at 117° C. (242.6° F.).

It is a clear, colorless, thick liquid, having a sp. gr. 0.97 boiling at 117° C. (242.6° F.), without decomposition, having a strong alkaline reaction, an ammoniacal odor and a caustic taste. It is freely soluble in water, and may be mixed with cresols, but is not miscible with benzene (benzol) or ether. It dissolves albumin, even when boiled, very readily.

Being a strong base its incompatibilities are about the same as those of sodium hydroxide.

Actions and Uses.—It is said to be non-corrosive and useful as an albumin solvent for the solution of false membranes in diphtheria and similar affections of the mucous membranes. It is presented for use in the form of kresamine (which see).

Proprietary Preparation:

ETHYLENEDIAMINE SOLUTION, 10 Per Cent.—A solution containing 10 per cent. ethylenediamine (which see).

Actions and Uses.—See ethylenediamine.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. Germany (Schering & Glatz, New York).

ETHYLENEDIAMINE PREPARATIONS

KRESAMINE.—*Ethylene-Diamine Trikresol.*—Kresamine is a clear watery solution of 25 per cent. of trikresol (which see) and 25 per cent. of ethylene-diamine.

It is a clear, colorless liquid, miscible in all proportions with glycerin, and soluble to the extent of about 20 per cent. in water, but insoluble in petrolatum.

Actions and Uses.—Kresamine is a bactericide, with a claimed minimum of toxicity. It is said that the bactericidal effect of the cresol and its power of penetrating the animal tissues are greatly enhanced by the presence of ethylenediamine and it is claimed to be less irritating when used as a wet dressing than other antiseptics. It is said to be useful in all cases where an active bactericide is required and particularly when microbes are in an albuminous menstruum. The preparation is not so dangerous as carbolic acid. It has been employed for the treatment of ulcers, eczema, lupus and other skin affections.

Dosage.—It is used only in dilutions (2 to 25) containing 2 per cent. or less of each of its active constituents.

Kresamine may be applied in the form of ointment.

A dilution containing 2 per cent. of each ingredient was formerly marketed under the name "Ethylene-diamine Trikresol Solution." This was used without dilution.

Prepared by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). German patent No. 74,634.

EUCAINE

The "Eucaines" are two closely allied synthetic bases, differentiated as eucaine "A" and eucaine "B." or "Alpha-eucaine" and "Beta-eucaine" alpha-eucaine being a synthetic derivative of triacetonamine, while beta-eucaine is a synthetic derivative of vinyl-diacetone-alkamine.

Alpha-Eucaine Hydrochloride has been withdrawn from the American market by the agents, Schering & Glatz, New York.

BETA - EUCAINE HYDROCHLORIDE — Beta - Eucainæ Hydrochloridum.—*Trimethylbenzooxypiperidinum Hydrochloricum* (Pharm. Helvetica edit. 4). Eucainum Hydrochloricum β (Pharm. Hungarica, edit. 3). Chloretum Eucaicum (Pharm. Danica, 1907). Eucaine Hydrochloride β. Beta-eucaine hydrochloride. $C_5H_7N(CH_3)_3(C_6H_5COO).HCl$, is 2,6,6-trimethyl-4-benzoxy-piperidine hydrochloride.

It is prepared by treating diacetonamine with paraldehyde, reducing the product with metallic sodium, benzoylating the vinyl-diacetonalkamine (melting at 138° C.) so produced by treatment with benzoylchloride, neutralizing the resulting benzoyl-vinyl-diacetonalkamine (trimethyl-benzoxypiperidin) with hydrochloric acid and crystallizing.

It forms a white crystalline powder, soluble in 20 to 30 parts of water at the ordinary temperature, but more soluble in warm water, soluble in 25 to 30 parts of alcohol, producing neutral solutions which can be sterilized by boiling without change. The aqueous solutions yield ether soluble precipitates of the free base on addition of alkali hydroxides or carbonates. Ammonia water produces a precipitate which redissolves, but is reprecipitated on the addition of more ammonia.

The saturated aqueous solution gives no precipitate with mercuric chloride, which distinguishes it from the corresponding alpha-eucaine salt. It gives no color reactions with sulphuric or nitric acid, but yields a yellow precipitate with chromic acid, orange yellow with bismuth-potassium iodide, lemon yellow with picric acid and a white precipitate with phosphomolybdic acid. It is incompatible with alkalies and their carbonates.

If to a solution of 0.1 Gm. of beta-eucaine hydrochloride in 20 Cc. of water 1 drop of ammonia water (10 per cent.) is added. a white precipitate is produced which gradually disappears on shaking. If 3 drops more or ammonia water are added, a precipitate again occurs which dissolves on the addition of 20 Cc. of water. Further addition of ammonia produces a precipitate which is again dissolved on the addition of 10 Cc. of water. If to this liquid ammonia is again added no precipitate occurs, but merely a milky turbidity which disappears on the addition of water.

Beta-eucaine hydrochloride dissolves in sulphuric acid without color.

If 1 drop of a 1 per cent. solution is mixed with 1 drop of mercuric chloride test solution, no precipitate should occur (absence of cocaine and alpha-eucaine).

0.1 Gm. of beta-eucaine hydrochloride should leave no weighable residue on incineration.

Quantitative Determination: 0.5 Gm. eucaine hydrochloride is dissolved in 100 Cc. of alcohol. This solution is titrated with tenth normal sodium hydroxide solution, using phenolphthalein as indicator. 1 Cc. tenth normal sodium hydroxide solution= 0.0269 Gm. of eucaine hydrochloride. Instead the alkaloid may be extracted with chloroform from the aqueous solution made alkaline with ammonia water, the chloroform allowed to evaporate spontaneously, the residue dried in a desiccator, and weighed. The alkaloid should weigh 86.56 per cent. of the weight of the salt.

Actions and Uses.—Beta-eucaine hydrochloride is a local anesthetic like cocaine, but weaker and devoid of the stimulating properties of the latter. It does not dilate the pupil, nor does it contract the blood vessels as does cocaine. It has the advantage of stability even on prolonged boiling. It may be used in all cases in which cocaine is indicated as a local anesthetic, especially in ophthalmology.

Dosage.—It may be applied in a 2 to 3 per cent. solution to the eye, 5 to 10 per cent. for nose and throat and 5 to 10 per cent. for ointment for hemorrhoids.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 657,880 (Sept. 11, 1900; expires 1917). German patent No. 97,672.

BETA-EUCAINE LACTATE—Beta-Eucainæ Lactas.—Beta-eucaine lactate, $C_5H_7N(CH_3)_3(C_6H_5COO).C_3H_6O_3$, is 2,6,6-trimethyl-4-benzoxy-piperidine lactate.

It is prepared in a manner similar to the method for beta-eucaine hydrochloride, lactic acid being substituted for hydrochloric.

Beta-eucaine lactate forms a white crystalline powder soluble in about 5 parts of water at the ordinary temperature in 10 parts alcohol and in 5 parts chloroform and in fatty oils with the aid of chloroform. It melts at about 152° C. (305.6° F.). The aqueous solution is feebly alkaline to litmus. In aqueous solutions the base can be thrown down by solutions of sodium or potassium hydroxide as an oily deposit which solidifies after a time. Ammonia produces a precipitate which redissolves, but is reprecipitated on the addition of more ammonia.

Tests: The precipitate caused by 4 drops of ammonia water (10 per cent.) in a solution of 0.1 Gm. of beta-eucaine lactate in 20 Cc. of water is redissolved on the addition of 20 Cc. of water.

If a few drops of diluted sulphuric acid and 1 Cc. of potassium bichlorate solution (1:10) are added to 0.1 Gm. of eucaine lactate, heating develops an odor of acetaldehyde.

0.1 Gm. of eucaine lactate should dissolve without coloration in 1 Cc. of cold sulphuric acid (sp. gr. 1.84). 0.2 Gm. of eucaine lactate, on combustion, should leave no weighable residue.

Quantitative Determination: 0.5 Gm. eucaine lactate is dissolved in 100 Cc. of alcohol. This solution is titrated with tenth-normal sodium hydroxide solution, using phenolphthalein as indicator. 1 Cc. tenth-normal sodium hydroxide solution = 0.0323 Gm. of eucaine lactate. Instead the alkaloid may be extracted with chloroform from the aqueous solution made alkaline with ammonia water, the chloroform allowed to evaporate spontaneously, the residue dried in a desiccator, and weighed. The alkaloid should weigh 72.30 per cent. of the weight of the salt.

Actions and Uses.—The same as those of beta-eucaine-hydrochloride, over which it possesses the advantage of greater solubility.

Dosage.—For hypodermic injections, 2 to 4 per cent. solutions (preferably in 0.6 to 1.0 per cent. sodium chloride solution with or without epinephrine); in the eye, 1 to 2 per cent. solutions; for penciling or tamponading mucous membranes, 10 to 15 per cent. solutions; for infiltration, 1 to 500 solutions with sodium chloride 0.6 to 1 per cent. and epinephrine; for painful wounds, 5 to 10 per cent. ointments with wool fat (adeps lanæ).

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 657,880 (Sept. 11, 1900; expires 1917).

EUGALLOL.—Eugallol is a solution consisting of two parts of monoacetylpyrogallol, $C_6H_3(OH)_2(CH_3COO)$, and one part of acetone.

It is prepared by treatment of pyrogallol with acetic anhydride or acetyl chloride, in the presence of a solvent and subsequent removal of the solvent by distillation. It is also obtained by other methods.

Actions and Uses.—Eugallol acts as an energetic substitute for pyrogallol, but is liable to produce local irritation when applied to the skin.

It is said to be useful externally in old and persistent cases of psoriasis.

Dosage.—It is applied pure by penciling once a day, covering the painted part with powdered zinc oxide, suspending the application a few days if it is followed by irritation.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. German patent No. 104,663.

EUMYDRIN — Methylatropinæ Nitras. — Atropinmethyl Nitrate.—Eumydrin, $C_6H_5(HO.CH_2)CH.CO_2.C_7H_{11}N(CH_3)_2NO_3 = C_{18}H_{26}O_6N_2$, is the nitrate of methylated atropine.

It is obtained by the interaction of methyl-atropine halide with metallic nitrates, or by treatment of the methyl atropine base with nitric acid, by interaction of atropin with methyl nitrate and by other patented processes.

It is a white, crystalline salt, melting at 163° C. (325.4° F.), odorless, permanent and readily soluble in water or alcohol, but very sparingly soluble in ether or chloroform. A quantity of 100 parts contains atropin equivalent to about 90 parts of atropine sulphate.

On warming 0.01 Gm. of eumydrin with 1.5 Cc. of sulphuric acid until the solution begins to darken, and at once adding, carefully, 2 Cc. of water a violet color develops and at the same time a faint peculiar aromatic odor appears. A solution of 0.05 Gm. of eumydrin in 3 Cc. of water, remains clear on the addition of either 1 Cc. of sodium hydroxide solution or of ammonia water.

Being an alkaloidal salt it is incompatible with alkaline solutions, etc.

Actions and Uses.—Eumydrin is a mydriatic and antihidrotic, replacing atropine sulphate both internally and externally in corresponding doses. It is claimed that it dilates the pupil more rapidly than atropine and the dilatation is of shorter duration—being intermediate in these respects between atropine and homatropine. It is said to be much less toxic than atropine, so that larger doses may be given to secure the effect. It is said to be particularly useful for the treatment of night sweats, whooping cough and for the relief of enuresis.

Dosage.—Internally as an antihidrotic, 0.001 to 0.0025 Gm. (1/60 to 1/24 grain). Externally as mydriatic, in solutions about one-tenth stronger than the usual atropine solutions.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). German patent Nos. 137,622 and 138,443.

EUPHORIN—Æthylis Phenylcarbamas.—Phenyl Urethane—Phenylethylurethane—Phenylcarbamic Acid Ethyl Ester.—Euphorin, $CO(NH.C_6H_5)(OC_2H_5) = C_9H_{11}O_2N$, is a compound closely allied to Æthylis Carbamas, U. S. P. (urethane) and differing from this by the replacement of the group NH_2 by NHC_6H_5.

It is prepared by the action of aniline on chlorformic acid ethyl ester.

It forms colorless needles or a white powder, melting at 50°-51° C. (122° to 123.8° F.), having a faint aromatic odor and clove-like taste. It is almost insoluble in water, readily soluble in diluted alcohol, in alcohol and in ether.

Actions and Uses.—Euphorin is anodyne, antipyretic and antiseptic.

It is said to be useful in rheumatism, sciatica, headache, etc. Externally it is recommended to be applied as a dusting powder in venereal and skin diseases, ulcers, burns, etc.

Dosage.—0.5 to 1 Gm. (8 to 15 grains) dissolved in wine or suspended in water; externally in powder, in lanolin ointment and in superfatted soap.

Manufactured by Fabrik von Heyden, Radebeul near Dresden, Germany. U. S. trademark.

EUPHTHALMIN—Euphthalmine Hydrochloride—Phenylglycolyl-Methyl-Vinyl Diacetonalkamine Hydrochloride.—Euphthalmin, is 1,2,6,6-tetramethyl-4-mandeloxy-piperidine hydrochloride, $C_5H_6N(CH_3)_4(C_6H_5.CHOH.COO).HCl$. It is closely related to trimethyl-benzoxy-piperidine hydrochloride (see Beta Eucaine Hydrochloride).

It is prepared by methylating [illegible] [illegible] hydrochloric acid into the solu- [illegible] its ether solution.

Actions and Uses.—Euphthalmin produces prompt mydriasis free from anesthetic action, pain, corneal irritation, or rise in intraocular tension. It has little or no effect on accommodation, and this disappears more rapidly than with atropine, cocaine, homatropine, etc. In its effects on the general system, euphthalmine very closely resembles atropine.

It is useful as an aid in ophthalmoscopic examinations in place of atropine, homatropine, etc.

Dosage.—2 or 3 drops of a 5 to 10 per cent. solution, according to age of the patient and the nature of the case, are instilled into the eye.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 663,754 (Dec. 11, 1900; expires 1917). U. S. trademark No. 35,541.

EUPYRINE. — Vanillin-Ethylcarbonate-Para-Phenetidin.—Eupyrine, $C_6H_4(OC_2H_5)N:[CH.C_6H_3(O.CO.OC_2H_5)(OCH_3)]$ 1:4 $= C_{19}H_{23}O_5N$ is a compound of para-phenetidin, differing from acet-phenetidine in that the acet-amino group, $NH(CH_3CO)$, is replaced by the group, $N:[CH.C_6H_3(O.CO.OC_2H_5)(OCH_3)]$.

It is prepared by the action of vanillin ethyl-carbonate, $C_6H_3(COH)\ O.CH_3)\ (O.CO.OC_2H_5)$ 1:3:4 on an equivalent amount of para-phenetidin, $C_6H_4(O.C_2H_5)(NH_2)$ 1:4. Chemically it differs from acetphenetidin (phenacetin) in that the vanillin ethyl-carbonate group has replaced the acetyl group of acetphenetidin.

It occurs in light yellow, needle-shaped crystals, melting at 87° to 88° C. (188.6° to 190.4° F.); tasteless, with faint odor of vanillin. It is insoluble in cold water, sparingly soluble in warm water and in cold alcohol, readily soluble in warm alcohol and in ether or chloroform.

Concentrated sulphuric acid is colored by eupyrine greenish yellow in the cold and dark brown on heating to the boiling point. Heated on platinum foil it burns without residue. Acids and alkalies decompose it.

Actions and Uses.—The toxic action of phenetidin is said to be counteracted in eupyrine by the vanillin. Doses twenty times as great as those used for man show no production of an amount of methemoglobin recognizable by the spectroscope. It is claimed to be a stimulant antipyretic.

Eupyrine is claimed to be useful as an antipyretic, especially for patients with a weak stomach or otherwise sensitive, on account of its freedom from side effects. *For internal use it is open to the same objections as the other coal tar derivatives* (see Acetphenetidin).

Dosage.—For adults, 1.5 Gm. (23 grains) once or twice daily. It can be given by itself as a powder.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany. (C. Bischoff & Co., New York.) U. S. patent No. 658,446 (Sept. 25, 1900; expires 1917). U. S. trademark No. 39,577.

EURESOL.—Resorcin Monacetate.—Euresol is resorcinyl acetate, $C_6H_4(OH)(CH_3COO) = C_8H_8O_3$, the acetic acid ester of resorcinol, $C_6H_4(OH)_2$,1:4.

It is obtained by acting on resorcinol with acetic anhydride or acetyl chloride, $C_6H_4(OH)_2 + CH_3COCl = C_6H_4(OH)(CH_3COO) + HCl$ or by otherwise replacing one hydroxyl group in resorcinol with an acetyl group.

It is a thick, honey-yellow, oily liquid, having an agreeable odor, boiling at 283° C. (541.4° F.) and soluble in acetone.

Actions and Uses.—Its action is similar to that of resorcinol, but milder and more lasting because of the gradual liberation of the phenol.

Euresol is said to be useful in acne, sycosis, seborrhea, and particularly in the treatment of chilblains.

Dosage.—It is applied in 5 to 20 per cent. ointments and in acetone solution.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. German patents Nos. 103,857 and 122,145.

Euresol Soap.—A soft soap, supplied in tubes, containing euresol, eucalyptol and oil of turpentine.

EUROPHEN — Di-Isobutyl-Cresol Iodide. — Europhen, $C_6H_3(C_4H_9)(CH_3)(OI).C_6H_2(CH_3)(:O)(.C_4H_9) = C_{22}H_{29}O_2I$, is a condensation product of 2 molecules of isobutylorthocresol, *with 1 atom of iodine, analogous to Thymolis Iodidum, U. S. P.*

It is prepared by the addition of a solution of iodine in potassium iodide to an alkaline solution of isobutylcresol, washing the precipitate with water, and drying it at a moderate temperature.

It forms a yellow, voluminous powder, fusing at 110° C. (230° F.), containing 28 per cent. of iodine, and having a faint saffron-like odor. It is insoluble in water or glycerin, but readily soluble in alcohol, ether, chloroform and the fixed oils. It is permanent in the dry state, but splits off iodine readily when moistened and rapidly when heated with water at 70° C. (158° F.), particularly in the presence of alkalies.

When triturated with glycerin and water, it yields a filtrate which is turned bluish by the addition of freshly prepared starch paste. Its alcoholic solution produces a yellow precipitate with mercuric chloride.

It should not be exposed to heat, light or damp air; it is incompatible with starch, metallic oxides, mercuric salts, and alkaline hydrates and carbonates.

Actions and Uses.—Its action is similar to that of iodoform and thymol iodide. It is claimed to be useful especially in the treatment of venereal ulcerations.

Dosage.—Europhen may be given internally in the form of pills in doses of from 0.2 to 0.3 Gm. (3 to 5 grains). Locally it may be used as a dusting powder in substance or mixed with an equal quantity of finely powdered boric acid, as an ointment, with wool fat (lanolin), or as a 5 per cent. embrocation, dissolved in olive oil.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 495,204 (expired); German patent No. 56,830. U. S. trademark No. 17,888.

EXODIN.—Exodin is a mixture of derivatives of rufigallic acid (*hexahydroxy-anthraquinone*). It contains diacetyl rufigallic acid tetra-methyl ester, acetyl-rufigallic acid pentamethyl ester and rufigallic acid hexa-methyl ester.

According to the patent it is obtained by treating rufigallic acid tetra-methyl ester with acetic anhydride and sodium acetate and purifying the product by crystallization.

Actions and Uses.—Exodin is claimed to be a pleasant and reliable cathartic. It is said to produce a mild and protracted tonic effect on the digestive tract and to produce neither gastric pains nor colic.

Exodin is claimed to be useful in acute and chronic constipation of the atonic form and also in cases in which regular evacuation of the bowels must be stimulated in consequence of hemorrhoids, etc.

Dosage.—For children, 0.5 Gm. (7½ grains); adults, 1 to 1.5 Gm. (15 to 22 grains) in tablets or in powder stirred up with water.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 751,216 (Feb. 2, 1904; expires 1921). U. S. trademark No. 43,029.

FERRATIN—Sodii Ferrialbuminas.—Sodium Ferrialbuminate.—*Ferratin is the sodium salt of ferrialbuminic acid*, containing iron in the ferric state in organic combination, equivalent to 6 per cent. metallic iron.

Sodium ferrialbuminate occurs naturally in the organs of mammals, especially in the liver Ferratin is prepared from egg albumin and chemically pure iron salts in the presence of alkalies.

Ferratin is a light brown, tasteless powder, having a faint odor. It is soluble in weak alkaline aqueous solutions, from which solutions it is precipitated by hydrochloric acid. On dissolving 0.3 Gm. ferratin in 10 Cc. of water with the aid of a few drops of ammonia water, and then adding an equal volume of a 25 per cent. potassium carbonate solution, no precipitation occurs.

Actions and Uses.—See Organic Iron Compounds.

Dosage.—0.5 Gm. (7½ grains) three to four times daily.

Manufactured by C. F. Boehringer & Soehne, Waldhof, Mannheim, Germany. (Merck & Co., New York). U. S. patent No. 505,986 (expired). U. S. trademark No. 24,228.

FERRIC ARSENITE, SOLUBLE—Ferri Arsenis Solubilis.—Ferric Arsenite and Ammonium Citrate.—Soluble Ferric Arsenite is Ferric Arsenite made soluble by the addition of ammonium citrate.

Soluble ferric arsenite occurs in green scale, easily soluble in water; it contains 1.06 per cent. arsenic, equivalent to 1.4 per cent. arsenous oxide, and iron, equivalent to from 15 to 18 per cent. elementary iron.

Actions and Uses.—Soluble ferric arsenite is a hematinic said to be particularly indicated in anemia complicated with malaria, in pernicious anemia and in pellagra.

Dosage.—0.03 to 0.065 Gm. (½ to 1 grain). It may be given by subcutaneous injections in the gluteal region in doses of 0.03 Gm. (½ grain) dissolved in 1 Cc. (15 minims) of water every two or three days.

Non-Proprietary Preparations:

Ampules Iron Arsenite Solution S. & D.—Each ampule is said to contain soluble iron arsenite, 0.06 Gm. (1 grain), dissolved in 1 Cc. (16 minims) of distilled water, representing closely 0.00092 Gm. (1/70 grain) of arsenic trioxide and 0.0092 gm. (1/7 grain) of metallic iron.

Prepared by Sharp & Dohme, Baltimore, Md.

FERRO-MANGAN Dieterich—Liquor Ferro-Mangani Peptonati "Dieterich."—Ferro-mangan is a solution of a compound of peptone with iron and manganese, containing 0.6 per cent. *of iron, 0.1 per cent. of manganese* and 1.5 per cent. of peptone.

It is prepared by covering 40.0 Gm. of iron and manganese peptonate "Dieterich" with distilled water for one hour, then heating to boiling with 550.0 Cc. of distilled water and allowing to cool. An aromatic mixture is added consisting of 100.0 Cc. cognac, 75.0 Cc. alcohol, 90 per cent., 0.25 Gm. saccharin, 12.5 Cc. aromatic tinctures, and sufficient distilled water to make 1000.0 Cc.

Ferro-mangan is a clear liquid of a dark-brown color and pleasant odor and taste. It is slightly acid in reaction.

The iron is in the organic or non-ionic form (see "Organic Iron preparations").

Method of Valuation: The specific gravity at 15° C. (59° F.) should be about 1.056. The percentage of dry residue at 100° C. (212° F.) varies between 13.25 and 16.80. The percentage of residue after ignition varies between 0.99 and 1.05. The percentage of iron and manganese determined by well-known methods varies between 0.58-0.64 per cent. of iron and 0.13-0.19 per cent. of manganese.

Actions and Uses.—It has the actions of iron and manganese.

It is said to be useful in anemia, chlorosis, convalescence and as a general tonic.

Dosage.—4 to 16 Cc. (1 to 4 fluidrams), according to age, three times a day.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany (The Reinschild Chemical Co., New York). Not patented or trademarked.

FERROUS LACTATE—Ferri Lactas.—Iron Lactate—Ferrum Lacticum. (U. S. P., 1890; Pharm. Germanica, edit. 4; Pharm. Helvetica, edit. 4; Pharm. Belgica, edit. 3; Pharm Francaise, 1908); Ferrous lactate, $Fe(C_3H_5O_3)_2 + 3H_2O$ is the ferrous salt of lactic acid. The salt contains approximately 19 per cent. of metallic iron.

Ferrous lactate occurs in pale greenish-white crusts, consisting of small needle-shaped crystals, or transparent green scales, having a slight, peculiar odor and a sweetish, ferruginous taste.

It is slowly soluble in about 40 parts of cold, and in 12 parts of boiling water; almost insoluble in alcohol; freely soluble in a solution of an alkali citrate yielding a green solution.

When strongly heated the salt froths, gives out dense, white, acid fumes, chars and finally leaves a brownish red residue.

The aqueous solution of the salt has a greenish-yellow color, a slighly acid reaction, and gives a deep blue precipitate with potassium ferricyanide, and a light blue one with potassium ferrocyanide.

A 2 per cent. aqueous solution of the salt should not yield more than a faint opalescence with a solution of lead acetate (limit or absence of sulphate, chloride, citrate, tartrate and malate). The aqueous solution after acidulation with hydrochloric acid should not yield any precipitate or coloration when treated with hydrogen sulphide (absence of foreign metals).

The aqueous solution, acidulated with nitric acid, should not afford more than a slight opalescence with barium chloride solution or with silver nitrate solution (limit of sulphate or chloride). If 25 Cc. of a 2 per cent. aqueous solution of the salt be mixed with 5 Cc. of diluted sulphuric acid, the mixture boiled for a few minutes, an excess of sodium hydroxide added and the mixture filtered, the filtrate when mixed with a few drops of alkaline cupric tartrate solution and boiled, should not yield a red precipitate (absence of sugar).

If a portion of the salt be triturated with strong sulphuric acid no offensive odor should be developed (absence of butyric acid), nor should any gas be evolved (absence of carbonate), and the mixture after standing for some time should not assume a brown color (absence of sugar, gum, or other readily carbonizable impurities).

If 1 Gm. of the salt, contained in a porcelain crucible, be moistened with nitric acid and carefully ignited, it should leave a residue of ferric oxide weighing not less than 0.270 nor more than 0.278 Gm. This residue should not have an alkaline reaction on litmus paper, nor yield anything soluble to water (absence of foreign salts).

Actions and Uses.—Ferrous lactate is a mild chalybeate which because of its feeble taste may be taken without difficulty.

Dosage.—0.06 to 1.3 Gm. (1 to 20 grains). Owing to its liability to oxidation, it is best prescribed in solutions containing much sugar. Syrup dissolves 1 Gm. in 120 Gm. (4 grains to the fluidounce).

FILICIC ACID AND RELATED SUBSTANCES

Aspidium and pharmaceutical preparations thereof have long been used as teniafuges. The most recent work indicates that aspidium probably contains the following constituents, in approximately the amount indicated: Filicic acid, 3.5 per cent.; flavaspidic acid, 2.5 per cent.; albaspidin, 0.05 per cent.; aspidinol, 0.10 per cent.; flavaspidin, 0.10 per cent.; amorphous acid, 5.0 per cent. and filicic nigrine, 6.0 per cent. These substances are, for the greater part, derivatives of phloroglucinol, and some of them are ketones possessing acid characters.

The various formulas assigned to the filicic acids and the different results reported regarding their physiological activity, have given rise to much confusion, leaving the chemistry in an unsettled condition. One of the first formulas assigned to filicic acid is that of Luck—$C_{26}H_{30}O_9$, which differs considerably from the formula—$C_{14}H_{18}O_5$—given this substance by Grabowski and $C_{14}H_{16}O_5$, as suggested by Daccoma. Later two forms, a crystalline and an amorphous filicic acid, were recognized by Poulson, who suggested the formula, $C_{36}H_{40}O_{12}$ for the crystalline filicic acid and $C_{36}H_{42}O_{13}$ for the amorphous acid, which latter he considered as the active therapeutic principle of aspidium. Poulson believed the crystalline acid to be the anhydride of the amorphous acid. More recently, Gallas has stated the formula for both the crystalline and the amorphous filicic acid to be $C_{14}H_{22}O_6$. Gallas and later Kraft concluded that one form of the acid was the lactone of the other form. Filicinic acid, which has the formula ($C_8H_{10}O_3$) is sometimes confused with filicic acid. Besides a difference in the theories regarding the constitution of the various filicic acids, there has been considerable controversy over the anthelmintic properties of these substances.

Our knowledge of the subject is very imperfect, but the majority of authors still accept filicic acid as one of the active constituents of aspidium.

FILICIC ACID, AMORPHOUS.—Acidum Filicicum Amorphum.—Amorphous filicic acid is an organic acid $C_{36}H_{42}O_{13}$, obtained from several species of aspidium.

Amorphous filicic acid is a white, or yellowish powder, without odor or taste, melting at 125° C. (257° F.), soluble in cold alcohol.

Actions and Uses.—Amorphous filicic acid has been recommended as an anthelmintic, and is generally considered one of the active principles of several species of aspidium.

Dosage.—0.5-1.0 Gm. (8 to 15 grains) given with calomel or calomel and jalap.

Note:—The crystalline filicic acid, also designated as filicinic acid, which is considered as an anhydride of the amorphous, is devoid of anthelmintic action, and must not be used in place of the amorphous.

FILMARON.—Filmaron, $C_{47}H_{54}O_{16}$, is an active anthelmintic constituent obtained from the ethereal extract of aspidium (the rhizome of Dryopteris Filix Mas).

Filmaron is obtained from the male fern extract by isolating it in the form of a metallic salt, from which the free filmaron is liberated and suitably purified.

Filmaron occurs as a straw-colored amorphous powder, insoluble in water, difficultly soluble in ethyl and methyl alcohols, and rather difficultly soluble in petroleum ether. It is readily soluble in all proportions in ether, acetic ether, amyl alcohol, chloroform, benzine, carbon disulphide, and acetone, and also, though with partial decomposition, in solutions of the alkalies and alkali carbonates. The alcoholic solution exhibits a slightly acid reaction. Filmaron melts at about 60° C. (140° F.). It exhibits a strong tendency to cake together to form a resinous mass, which is difficult to reduce to powder and dispense; hence it is not marketed in substance, but as a 10 per cent. castor oil solution, which is known as "Filmaron oil."

0.5 Gm. filmaron and 5 Gm. pumice stone, and 1 Gm. magnesia are finely triturated with 250 Cc. water, the mixture shaken for half an hour, and then filtered. On passing a rapid current of carbon dioxide through the filtrate a voluminous, flocculent precipitate forms; the filtrate should afford but very slight precipitate on the addition of hydrochloric acid.

On dissolving 0.1 Gm. filmaron in 0.2 Gm. acetic ether or 0.2 Gm. carbon disulphide by rotation in a test tube, and setting the stoppered tube aside for three days, no separation should have taken place at the end of this time (absence of other male fern constituents; filicic acid and flavaspidic acid).

0.1 Gm. filmaron should completely dissolve in 0.5 Gm. warm petroleum ether, and leave no more than a slight trace of undissolved substance. To detect the filmaron in the castor oil solution (filmaron oil), dilute the filmaron oil with ether, shake out with sodium hydroxide solution, acidulate the alkaline liquid, and then take up the liberated filmaron with ether. On evaporating the ether the filmaron is obtained as a residue.

Actions and Uses.—Filmaron is said to exhibit the specific action of male fern extract and to be useful as an anthelmintic for expelling intestinal parasites.

It is claimed to be devoid of the injurious side actions sometimes exhibited by the oleoresin of male fern and to be harmless when given in the dose necessary for the expulsion of tape worm.

Dosage.—See Filmaron Oil.

Manufactured by C. F. Boehringer & Soehne, Waldhof near Mannheim, Germany (Merck & Co., New York). U. S. trademark No. 40,558.

Filmaron Oil.—Filmaron oil is a 10 per cent. solution of Filmaron in castor oil.

Dosage: 10 Cc. (2½ fluidram).

FLUORESCEIN—Fluoresceinum. — Resorcinolphthalein (a term not strictly correct but commonly used), dioxyfluoran.—Fluorescein, $O:(C_6H_3OH)_2:C.C_6H_4.COO = C_{20}H_{12}O_5$, is the anhydride of fluoresceinic acid $O:(C_6H_3OH)_2:C(OH).C_6H_4(COOH) = C_{20}H_{14}O_6$.

Fluorescein is prepared by the fusion of phthalic anhydride and resorcinol at 195-200° C. (383-392° F.) till the mass becomes solid. This is extracted with water and the residue dissolved in potassium hydroxide solution, which is then filtered and the fluorescein precipitated with acid.

Fluorescein is an orange red powder, insoluble in water, ether, chloroform, and benzol; soluble in hot glacial acetic acid and boiling alcohol. It dissolves in alkaline solutions with formations of a salt

The alkaline solution by transmitted light is red; by reflected light it has a green fluorescence even in very dilute solutions. When fluorescein is boiled, with chalk and water, the calcium salt of fluorescein is formed which is recognized by its red brown color and green sheen.

Actions and Uses.—The soluble sodium salt of fluorescein (fluorescein 2 Gm., sodium bicarbonate 3 Gm., water to make 100 Cc.) has been used for the diagnosis of corneal lesions and detection of minute foreign bodies imbedded in the cornea. While a weak solution of fluorescein will not stain the normal cornea, ulcers or parts deprived of epithelium will become green and remain so for a time; foreign bodies will appear surrounded by a green ring; loss of substance in the conjunctiva is indicated by a yellow hue. Fluorescein also reveals defects or disease of the endothelium of the cornea, producing a deep coloration of the diseased area.

Non-Proprietary Preparation:

Tabloid (Ophthalmic) Fluorescein B.-W. & Co.—Each tablet contains fluorescin 0.00026 Gm. (1-250 grain) in combination with sodium, and weighs 0.0032 Gm. (1-20 grain).

Prepared by Burroughs-Wellcome & Co., London, England, and New York.

FORMIC ACID—*Acidum Formicum.*—Acidum formicum (Pharm. Helvetica, edit. 4; Pharm. Germanica, edit. 4).

Formic acid is a liquid containing 24-25 per cent. of anhydrous formic acid (HCOOH).

Formic acid is a clear colorless liquid possessing a sharp acid odor and taste. It has a specific gravity of 1.058-1.061. With lead acetate, formic acid produces a white crystalline precipitate. On warming with silver nitrate a gray turbidity and with mercuric chloride a white turbidity is produced. A solution (1-10) after the addition of a few drops of nitric acid should yield no precipitate with silver nitrate or barium chloride; and after neutralizing with ammonia water calcium chloride or hydrogen sulphide should produce no precipitate. If 1 Cc. formic acid is mixed with 5 Cc. water and 1.5 Gm. mercuric oxide (yellow) and heated on the water bath there will follow an evolution of gas leaving a mixture which when filtered will yield a filtrate which should not react acid (acetic acid). Five Cc. formic acid should quire 27.6 Cc. to 28.8 Cc. normal alkali for neutralization, denoting a content of 24-25 per cent. by weight or 254-265 Gm. anhydrous formic acid per liter. The titrated solution should yield no burned or sharp odor (*Pharm. Helv. and Pharm. Germ.*).

Action and Uses.—The actions resemble those of acetic acid but it is more volatile, more irritant and more antiseptic Formic acid is much more resistant to oxidation, in the body than the other organic acid, and is therefore excreted to a large extent as formates, in the urine. These have an irritant action on the kidneys and urinary tract, and are diuretic Large doses cause methemoglobinemia, but the toxicity is quite low. It has no effect on the general circulation or on the motor system, as has been claimed. It has been lauded in a great variety of disorders, but there is no good evidence that its internal use produces any benefits other than psychical Its external use as a counterirritant is rational, but it possesses no special advantages.

Dosage.—Internally, 1-20 drops of the 25 per cent. acid, largely diluted; or 0.1-0.25 Gm. (1½-4 grains) of sodium formate. Externally usually in a solution containing 1 per cent. of the absolute acid in alcohol or diluted alcohol.

FORTOIN—Methylene-Dicotoin.—Fortoin, $CH_2(C_{14}H_{11}O_4)_2 = C_{29}H_{24}O_8$, is a condensation product of cotoin and formaldehyde.

It is prepared by condensation of cotoin and formaldehyde by means of dehydrating agents (hydrogen chloride): $2C_{14}H_{12}O_4 + CH_2O = CH_2(C_{14}H_{11}O_4) + H_2O$.

Fortoin forms yellow, needle-shaped, tasteless crystals, melting at 211° to 213° C. (411.8° to 415.4° F.) It is insoluble in water, sparingly soluble in alcohol, ether or benzol, but freely soluble in dilute alkalies, acetone or chloroform.

Fortoin dissolves in cold concentrated sulphuric acid with an orange color, and on warming the solution becomes ruby red. Heated on platinum foil it should burn without leaving any residue. On shaking with cold water or alcohol it should not yield any soluble constituents.

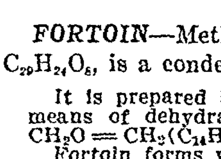
Actions and Uses.—Fortoin has an antiputrefactive, bactericidal action. It is said to cause an active, not passive, dilatation of the intestinal vessels by which the nutrition of the epithelium is improved and its regeneration hastened.

Fortoin is said to be useful as an antidiarrheic in acute and chronic intestinal catarrh and in the obstinate diarrheas due to pellagra and to tuberculosis. (See note under Beta-naphthol Benzoate.)

Dosage.—0.25 Gm. (4 grains) three times a day for adults.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany (C. Bischoff & Co., New York). German patent No. 104,362. U. S. trademark No. 39,523.

GALLOGEN—Ellagic Acid.—Benzoaric Acid.—Gallogen,



$$\begin{array}{c} C_6H(OH)_2 \\ CO \quad O \\ C_6(OH)_2.COOH \end{array} = C_{14}H_6O_8$$

is anhydrous ellagic acid prepared from Divi-divi, the pods of *Cæsalpina coriaria.*

It is prepared by prolonged boiling of an aqueous extraction of divi-divi, whereby the amorphous acid assumes a crystalline condition and is completely precipitated, then collecting the precipitate, washing and drying.

It is a yellowish, odorless, tasteless powder, insoluble in all acid and neutral liquids, but soluble in alkaline liquids to the amount of 2 per cent., such solutions being, however, very readily oxidized.

Its solutions in alkaline media give all the reactions of tannic acid with iron salts, gelatin solution, etc. With fuming nitric acid it gives a characteristic dark red color.

It is incompatible with alkaline liquids.

Actions and Uses.—Gallogen is an astringent and antidiarrheic, slowly decompose in the intestinal tract, thus exerting its astringent action gradually during its passage.

It is said to be useful in dysentery, cholera infantum, diarrhea, even in cases of a syphilitic or tuberculous origin.

Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for children; 0.6 to 1 Gm. (10 to 15 grains) for adults, suspended in neutral or slightly acid media.

Manufactured by Ad. Heinemann, Eberswalde, Germany (C. Bischoff & Co., New York). German patents Nos. 137,033 and 137,034.

GELSEMINE HYDROCHLORIDE—Gelseminæ Hydrochloridum.—Gelsemine hydrochloride is the hydrochloride of an alkaloid, $C_{24}H_{28}N_2O_4,HCl$ (*Gerrard*) ($C_{22}H_{26}N_2O_2$ by Spiegel, Ber. d. deut. Chem. Ges., vol. 26, p. 1054) derived from Gelsemium (Gelsemium sempervirens (L) Ait. f. Fam. Loganiaceæ).

Gelsemine hydrochloride occurs in prismatic crystals or a white crystalline powder. Soluble in water, but difficultly soluble in alcohol.

With concentrated sulphuric acid it gives a yellowish, and with concentrated nitric acid a *green coloration. If potassium* dichromate is introduced *into a solution of gelsemine in strong* sulphuric acid a cherry red coloration shading into violet which soon becomes green is produced at the point of contact.

Action and Uses.—Pure gelsemine appears to have a very slight toxic action, increasing reflex action in frog, to some extent, its action resembling strychnine. The effects of the commercial preparations are thought to be due to the gelseminine which they contain in varying quantities.

It has been used in neuralgia, especially trigeminal.

Dosage.—0.0005 to 0.002 Gm. (1/134 to 1/33 grain).

Note.—Gelseminine is a very poisonous alkaloid, found in gelsemium, which has an action very similar to that of coniine but is more depressant to the central nervous system, and must be carefully distinguished from gelsemine. Gelseminine is a mydriatic but is seldom used as such owing to its irritating action. Merck's "gelseminin" appears to consist of gelsemine and not gelseminine.

Gelsemine (Gerrard) is, according to Cushny (Proc. Am. Ph. Assn., Vol. 41, p. 850), the same as the German "crystallized gelsemine."

GLUTOL-Schleich.—Formalin Gelatin.—A chemical combination of gelatin and formaldehyde.

It is prepared by dissolving 500 Gm. of gelatin in 375 Gm. of water, adding 25 drops of formaldehyde solution, exposing the mass so obtained, in a covered box over lime, to the vapor of formaldehyde by the aid of a layer of cotton wool saturated with it until a dry mass is produced, and reducing this to powder.

It is a white, odorless powder, insoluble in water under ordinary conditions, but dissolved when heated with water under pressure, the solution thus produced gelatinizing on cooling. It is not changed by the action of acids, but is slowly decomposed in contact with living cells. It may be sterilized without decomposition.

Actions and Uses.—It is claimed that while in itself non-antiseptic, non-irritant and non-toxic, it becomes antiseptic and bactericidal in contact with living cells, in consequence of the elimination of nascent formaldehyde, which is split off very slowly but steadily.

Glutol is said to be useful as an odorless, non-irritant, non-poisonous aseptic dressing, having sustained antiseptic action for wounds, ulcers, burns, etc. (See note under Creosote Carbonate.)

Dosage.—It is employed undiluted as a dusting powder, etc.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). German patent No. 104,365. U. S. patent No. 572,295 (Dec. 1, 1896; expires 1913). U. S. trademark No. 28,431.

GLYCEROPHOSPHATES.

Glycerophosphates are the salts of glycerophosphoric acid, $H_2(CH_2OH.CHOH.CH_2)PO_4$.

The calcium compound is prepared by heating glycerin and phosphoric acid under certain conditions for a considerable time and then neutralizing with lime. The precipitated calcium phosphate is removed, while the calcium glycerophosphate remains in solution From the calcium salt the other salts can be prepared by precipitating calcium by the appropriate salt of the metal whose glycerophosphate is desired. Thus the addition of sodium carbonate to a solution of calcium glycerophosphate yields insoluble calcium carbonate and a solution of sodium glycerophosphate.

The potassium and sodium glycerophosphates are dense syrupy liquids, exceedingly soluble in water, and represent 75 per cent. of the respective salts in a dry condition. The calcium, iron, lithium, magnesium and manganese glycerophosphates are pulverulent salts, moderately soluble in water.

When a solution of glycerophosphate is tested by ammonium molybdate for the presence of a phosphate, only a slight yellow precipitate should form at once.

The watery solutions of glycerophosphates decompose in a short time. They should be made from sterilized water, but hot liquids should not be used for their preparation.

Actions and Uses.—These salts were introduced as "nerve foods" and tonics on the theory that their phosphorus, being a step nearer lecithin, is assimilated more readily than that of hypophosphites. Neither the experimental nor the clinical evidence is considered conclusive by all authorities.

Dosage.—The potassium and sodium salts may be given hypodermically 0.2 to 0.25 Gm. (3 to 4 grains) in normal saline solution, or *per os* 0.25 to 0.65 Gm. (4 to 10 grains) in water or syrup. The calcium, iron, lithium, magnesium and manganese salts 0.2 to 0.65 Gm. (3 to 10 grains) doses, preferably in the form of tablets; the quinine salt in 0.1 to 0.33 Gm. (1½ to 5 grains), and the strychnine salt in 0.001 to 0.003 Gm. (1/60 to 1/20 grain) doses.

TONOLS.—The name applied by E. Schering to identify glycerophosphates of his manufacture. See appendix, Schering & Glatz.

GUAIACOL COMPOUNDS.

Guaiacol Carbonate is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physician's Manual of the United States Pharmacopeia and National Formulary.

DUOTAL.—A name applied to Guaiacolis Carbonas, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No 466,913 (expired). U. S. trademark.

DUOTAL-Heyden.—A name applied to Guaiacolis Carbonas, U. S. P.

Manufactured by Chemische Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York). U. S. patent No. 466,913 (expired). U. S trademark No. 28,957.

BENZOSOL—Guaiacolis Benzoas.—Guaiacol Benzoate—Benzoyl-guaiacol. — Benzosol, $C_6H_4(OCH_3)(C_6H_5COO) = C_{14}H_{12}O_3$, is methoxy-benzoxy-benzene. It is closely related to guaiacol, $C_6H_4(OH)(CH_3)$, from which it differs in that the hydroxy-group is replaced by the benzoxy-group.

It is prepared by warming the potassium salt of guaiacol with benzoyl chloride and crystallizing the product from hot alcohol.

It forms colorless, minute crystals which melt at 59° to 61° C. (138.2° to 141.8° F.); they are odorless and tasteless or nearly so. It is practically insoluble in water, sparingly soluble in ether, but readily soluble in hot alcohol. It contains 54 per cent. of guaiacol.

It forms with sulphuric acid a permanent yellow coloration which on the addition of acetone assumes a characteristic, brilliant cherry red color, distinguishing it from salol, which gives a yellow color. Ferric chloride produces in the benzosol sulphuric acid mixture a violet color, changing to green and blue, and on the further addition of *nitric acid*, to orange and green, or of potassium nitrite to green, violet and yellow. When heated (saponified) with alcoholic potash, the odor of guaiacol is developed.

It is incompatible with the alkalies, which split up benzosol into guaiacol and benzoic acid.

Actions and Uses.—Benzosol is decomposed slowly in the intestinal tract into guaiacol and benzoic acid which exert their usual actions. The liberated constituents are absorbed and excreted in the urine. It is claimed to be not irritating.

Its uses are analogous to those of creosote and of benzoic acid. It is said to be useful in incipient pulmonary tuberculosis, as an intestinal antiseptic in fermentation, diarrhea, typhoid fever, diabetes mellitus and as a urinary disinfectant in cystitis, etc. (See note under Beta-naphthol Benzoate.)

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains), in powder, capsule, pill, or suspended in liquids or as an emulsion.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 453,035 (expired).

GUAIACODEINE. — Codeine-Ortho-Guaiacol-Sulphonate. Guaiacodeine is Codeine-Ortho-Guaiacol-Sulphonate $C_{18}H_{21}NO_3C_6H_3(OH)(OCH_3)(HSO_3)1:2:6 = C_{25}H_{29}O_8NS$, the neutral codeine salt of guaiacol sulphonic acid.

Guaiacodeine is produced by the *double* decomposition of a soluble salt of codeine with the potassium or barium salts of ortho-guaiacol-sulphonic acid taken in molecular quantities.

It is a white crystalline powder Soluble in 90 parts of water, 450 parts of alcohol and 30 parts of methyl alcohol, insoluble in ether; very slightly soluble in chloroform. Very soluble in hot water.

A drop of solution of ferric chlorid added to a solution of the salt in water or alcohol produces a deep blue color, indicating the presence of ortho-guaiacol-sulphonic acid.

The salt melts between 163° C. and 165° C. (325.4 and 327.20 F.) to a white liquid. 0.1 Gm. dissolves in 10 Cc. concentrated sulphuric acid without color.

Theoretically the salt contains 59.44 per cent. anhydrous codein, or 63.20 U. S. P. codeine (containing 1 molecule of water of crystallization) and 40.56 per cent. ortho-guaiacol-sulphonic acid.

Ammonia and alkalies precipitate from a concentrated solution of the salt the alkaloid, codeine, which should respond to the tests of the U. S. P. for that alkaloid

Actions and Uses.—Those of Codeine. Since the proportion of guaiacol is small it cannot well be used to secure the action of this agent.

Manufactured by the New York Quinine and Chemical Works, New York.

U. S. patent No. 963,254 (July 5, 1910; expires 1927). Not trademarked.

GUAIACOL-SALOL—Guaiacolis Salicylas.—Salicylate of Guaiacol.—Guaiacol-salol is guaiacyl salicylate, $C_6H_4.OH.COO(.C_6H_4.OCH_3) = C_{14}H_{12}O_4$, the salicylic acid ester of guaiacol, closely related to phenyl salicylate (salol).

It is prepared by treating a mixture of sodium salicylate and sodium guaiacolate, in molecular proportions, with phosphorus oxychloride, washing the product of the reaction with water and crystallizing from alcohol.

It is a white crystalline powder, tasteless, but having a salol-like odor. It is insoluble in water, but soluble in alcohol, ether and chloroform. It melts at 65° C. (149° F.).

Being an ester, it is decomposed by alkalies and alkaline carbonates with the formation of alkali salicylate and alkali *guaiacol* and salicylic acid. The alcoholic solution is colored wine red by the addition of ferric chloride, but if the alcoholic solution be dropped into a watery solution of ferric chloride a turbidity but no coloration is produced.

Actions and Uses.—This compound acts like its constituents, being antiseptic and antirheumatic. It is said to be useful in phthisical diarrhea, dysentery, rheumatism, marasmus, chorea, etc. (See note under Beta-naphthol Benzoate.)

Dosage.—1 Gm. (15 grains).

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Merck & Co., New York).

GUAIAMAR — Guaiacolglycerylester.—Guaiamar is glyceryl guaiacolate, $C_6H_4.OCH_3.O(CH_2OH.CHOH.CH_2)$, $1:2 = C_{10}H_{14}O_4$, the monoguaiacol ester of glycerin.

It is prepared by the reaction of two molecules of sodium hydroxide, one of guaiacol and two of monochlorhydrin at from 140° to 150° C. (284° to 302° F.). When the alkaline reaction has disappeared, the mass is diluted with water which leaves the greater part of the glycerin ester undissolved. The portion dissolved in the water *solution may* be extracted from the latter by ether.

It is a white crystalline, non-hygroscopic powder, melting at 75° C. (167° F.) and having a bitter, aromatic taste. It is soluble in 20 parts of water at the ordinary temperature, but dissolves best in warm water; it is soluble in alcohol, chloroform, ether and glycerin. Its solutions are *neutral* to test paper. It is decomposed by soluble hydroxides and carbonates and by strong acids.

Actions and Uses.—Guaiamar liberates guaiacol, partly in the stomach and partly in the intestinal canal, it being split up by the gastric and intestinal contents, with the assimilation of one molecule of water, into guaiacol and glycerin. By this evolution of guaiacol it is believed to exert an antiseptic action in the intestinal canal. It is said not to interfere with the normal process of digestion, but, on the contrary, exerts a tonic action. (See note under Beta-naphthol Benzoate.)

It is intended to be used as a substitute for guaiacol in any cases where the latter is indicated. In the form of ointment it has been recommended in acute articular rheumatism.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in capsules or dissolved in warm water. Locally, in the form of 25 per cent. ointment with wool fat (lanolin), by itself, or combined with belladonna, zinc or mercurial ointment, etc.

Manufactured by Mallinckrodt Chemical Works, St. Louis. U. S. patent No. 599,123 (Feb. 15, 1898; expires 1915).

GUJASANOL — Diethylglycocoll-Guaiacol Hydrochloride.—Gujasanol, $C_6H_4(OCH_3)(CH_2N(C_2H_5)_2.COO).HCl = C_{13}H_{19}NO_3$ HCl, is the hydrochloride of diethylglycocoll-guaiacol.

It is prepared by the action of chloracetylchloride on guaiacol and decomposition of the product with diethylamine.

It forms small, colorless, prismatic crystals, melting at 183° to 184° C. (361.4° to 363.2° F.), having a slight odor of guaiacol and a bitter saline taste. It is soluble in its own weight of water and in 25 parts of alcohol, but *insoluble* in ether.

The solution in water should be clear, colorless, and give a white precipitate with silver nitrate. The oily base separates on the addition of an alkali hydroxide. When incinerated on platinum it leaves no residue.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—It is antiseptic and anesthetic. It is readily absorbed and splits off guaiacol in the organism with facility. Its antiseptic power is said to be about equivalent to that of boric acid.

Gujasanol has been recommended for the treatment of tuberculosis, both internally and subcutaneously. It is also said to be useful as a deodorant and to have given good results in putrid cystitis.

Dosage.—1 to 3 Gm. (15 to 45 grains) in wafers; subcutaneously, 3 to 4 Gm. (45 to 60 grains) in 20 per cent. aqueous solution; locally it may be used in from 0.1 to 2 per cent. solutions.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 624,772 (May 9, 1899; expires 1916).

MONOTAL—Guaiacolis Methylglycolas.—Monotal is guaiacyl methyl glycolate, $CH_2(O.CH_3).COO.(C_6H_4.OCH_3)=C_{10}H_{12}O_4$, the methyl-glycolic acid ester of guaiacol.

Monotal is prepared by the action of methoxacetyl chloride on guaiacol.

Monotal occurs as a limpid, colorless oil, of a faintly aromatic odor, easily soluble in alcohol, ether, benzol, and chloroform; difficultly soluble in water. It is soluble in about 6 parts of olive oil. It boils under 15 mm. pressure at about 156° C. (312.8° F.). It is split up into guaiacol and methylglycolic acid when treated with caustic alkalies.

Monotal is easily saponified by aqueous or alcoholic solutions of potassium hydroxide and then gives the reactions characteristic of guaiacol and methylglycolic acid. When incinerated on platinum foil it leaves no residue. Its watery solution is not rendered turbid by solution of silver nitrate. It has a specific gravity of 1.17 to 1.18 at 20° C.

Actions and Uses.—Monotal is said to give the systemic effects of guaiacol without having its caustic and poisonous properties. It is easily absorbed by the skin. (See note under Creosote Carbonate.)

It is said to be useful as an analgesic for various painful affections in phlebitis and in pulmonary tuberculosis.

Dosage.—2 to 4 Cc. (½ to 1 fluidram) rubbed in or painted over the affected area once or twice daily.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 822,339 (June 5, 1906; expires 1923). U. S. trademark No. 62,612.

STYRACOL—Guaiacolis Cinnamas.—Guaiacol Cinnamate.—Styracol is guaiacyl cinnamate, $C_6H_5CH{:}CH.COO(C_6H_4.OCH_3 = C_{16}H_{14}O_3$, the cinnamic acid ester of guaiacol.

It is prepared by allowing guaiacol and cinnamyl chloride in molecular proportions to react on each other for two hours at the ordinary temperature, then heating the mixture on the water bath for a short time and purifying the product of the reaction by several crystallizations from boiling alcohol.

It forms colorless, odorless and tasteless crystalline needles, melting at 130° C. (266° F.). It is insoluble in water, but easily soluble in alcohol, acetone, chloroform and benzine. It contains 55 per cent. of guaiacol, which is split off by the action of alkalies.

It is incompatible with alkalies.

Actions and Uses.—Styracol is claimed to be an intestinal antiseptic and to combine the antituberculous actions of guaiacol and cinnamic acid. It is said to liberate in the intestinal canal a larger proportion of its guaiacol (up to 85 per cent.) than other synthetic preparations of that substance.

It is said to be useful in the initial stage of phthisis, chronic enteritis and intestinal disturbances in general, catarrh of the bladder, etc. (See note under Beta-naphthol Benzoate.)

Dosage.—1 Gm. (15 grains) in powder or tablets.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York. German patent No. 62,176. U. S. trademark No. 42,487.

THIOCOL—Potassii Guaiacolsulphonas.—Potassium Guaiacol-Sulphonate.—Thiocol is potassium guaiacol sulphonate, $C_6H_3(OH)\ (OCH_3)\ (KSO_3)1{:}2{:}6 = C_7H_7O_5KS$, the potassium salt of ortho-guaiacol sulphonic acid.

It is prepared by sulphonating guaiacol at a temperature not exceeding 70° to 80° C. (158° to 17[illegible] sulphuric acid, converting the guaiacol [illegible] into the barium salt, and this by double [illegible] sium [illegible] sulphate into the p[illegible] or faintly alkaline,

It is a colorless, [illegible] odorless, and having a faint bitter, followed by a sweet taste.

It is readily soluble in water, slightly soluble in ordinary alcohol, but insoluble in absolute alcohol and in ether or oils.

Its aqueous solution is not precipitated by barium chloride; ferric chloride produces an intense violet-blue color, which disappears on the addition of ammonia, or of concentrated solution of alkali chlorides or sulphates.

Actions and Uses.—Thiocol is said to be non-irritating to the mucous membranes of the digestive tract, readily absorbed, and is claimed to promote appetite and improve nutrition.

It is claimed that it is useful in pulmonary tuberculosis, acute and chronic bronchitis, pneumonia, whooping cough, emphysema of the lungs, etc., as a means of lessening expectoration, diminishing night sweats and improving nutrition.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains), in solution with orange syrup or in tablets.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 650.218 (May 22, 1900; expires 1917). U. S. trademark No. 78.327.

Syrup Thiocol Roche.—A syrup containing thiocol 10.5 Gm. in 100 Cc. (6 grains in a fluidram).

HEDONAL—Methylpropylcarbinol Urethane.—Pentan-2-Ol-urethane.—Hedonal is pentan-2-ol urethane, $CH_3.CH_2.CH_2.CH(CH_3)O.CO.NH_2 = C_6H_{13}O_2N$. It is a derivative of urethane differing from ethyl carbamate, U. S. P., in that the ethyl radicle has been replaced by the radicle of methyl-propylcarbinol (pentan-2-ol) $.CH_3.CH_2.CH_2.CHOH.CH_3$.

It is prepared by heating the secondary methylpropylcarbinol or pentan-2-ol, $CH_3.CH_2.CH_2.CHOH.CH_3$ with urea nitrate under pressure (U. S. patent No. 659,202), also by other methods (German patents Nos. 120,863, 120,864, 120,865).

It is a white, crystalline powder, having a faint aromatic odor and taste, melting at 74° C. (165.2° F.), and boiling at 215° C. (419° F.). It dissolves in 120 parts of water at 37° C. (98.6° F.), but is more soluble at higher temperatures and is readily soluble in alcohol, ether, chloroform and other organic solvents. It is readily volatilized with the vapors of water or alcohol, and when boiled with alkalies is split up into its constituents, methylpropylcarbinol, ammonia and carbon dioxide.

On boiling with dilute sodium hydroxide, ammonia is evolved and recognized by the odor and the usual reagents; if then an aqueous solution of iodine in potassium iodide is added, and the mixture allowed to cool, the odor of iodoform derived from the alcohol is distinctly manifested.

It is incompatible with alkalies, their carbonates and bicarbonates.

Actions and Uses.—Hedonal appears to have a greater hypnotic effect than ethyl carbamate. It is said to be followed by no after-effects and is oxidized in the body to urea and carbon dioxide. It is employed in insomnia due to mental overwork or nervous excitement occurring in the course of neurasthenia or hysteria. It is claimed to be particularly useful preliminary to anesthesia, a hypnotic dose being given and anesthesia effected with chloroform after the patient has been asleep for an hour.

Dosage.—1 to 2 Gm. (15 to 30 grains), administered dry, followed by a swallow of water, or in wafers or capsules.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 659,202 (Oct. 9, 1900; expires 1917); German patents Nos. 11,496, 120,863, 120,864, 120,865.

Hedonal Tablets, 8 grains.—Each tablet contains hedonal 0.52 Gm. (8 grains).

HEMABOLOIDS.—Hemaboloids is a liquid said to contain in each 100 Cc. iron, combined with proteins, equivalent to 0.40 Gm. elementary iron, proteins and nucleoproteins (nitrogen x 6.25) 4.0 Gm., bone marrow extract 5.0 Gm., nuclein 0.04 Gm., in a menstruum containing 17 per cent. alcohol by volume. It is claimed that 75 per cent. of the iron is in a stable organic combination with vegetable nucleoproteins and does not react with hematoxylin (see Organic Iron), while the remaining 25 per cent. is more loosely combined.

Actions and Uses.—Hemaboloids is claimed to act as a promptly absorbable and non-irritant form of food-iron. It is said not to constipate nor stain the teeth.

Dosage.—15 Cc. (½ fluidounce) after each meal. Children in proportion. Each average dose of 15 Cc. (½ fluidounce) contains iron 0.06 Gm. (0.92 grains), proteins and nucleoproteins 0.62 Gm. (9.6 grains), bone marrow extract 0.775 Gm. (12 grains), nuclein 0.006 Gm. (0.1 grain).

Manufactured by the Palisade Manufacturing Company, Yonkers, N. Y. U. S. trademark.

HEMOGLOBIN DERIVATIVES.

Hemoglobin is the coloring matter of the blood corpuscles and is the most important iron-containing compound of the body. It exists in venous blood as hemoglobin, sometimes called reduced hemoglobin, and in the lungs takes on oxygen in a loose chemical combination becoming oxyhemoglobin.

Hemoglobin is obtained from oxyhemoglobin by the action of various reducing agents.

When ingested it is decomposed in the stomach, being converted into a protein, globin, and into hematin, an acid nonalbuminous substance, containing the iron of hemoglobin. The same decomposition is produced by heating in solution to 70°, and by various chemical agents. It is doubtful whether hematin is absorbed into the blood from the gastrointestinal canal.

Various preparations of hemoglobin have been put on the market. These are of two classes. 1. Preparations consisting essentially of oxyhemoglobin usually sold under the name hemoglobin. 2. Preparations derived by the action of reducing agents on the blood, such as zinc, pyrogallol, etc. They consist of reduced hemoglobin, or of some modification of it.

CUPRO-HEMOL—Hæmolum Cupratum.—Cupro-hemol is hemol containing 2 per cent. of copper and 0.4 per cent. of iron in organic combination.

It is prepared by precipitating a solution of blood with a dilute neutral solution of a copper salt at a temperature not materially exceeding 0° C. (32° F.).

Actions and Uses.—Cupro-hemol is said to be useful in tuberculosis, scrofula, anemia, chlorosis, etc.

Dosage.—The maximum dose is 0.5 Gm. (8 grains).

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). German patent No. 86,146.

HEMOGALLOL.—Hemogallol is an organic iron compound produced from blood by reduction of its hemoglobin by means of pyrogallol.

Fresh defibrinated blood suitably diluted with water is mixed with an equal volume of saturated solution of pyrogallol which causes the precipitation of a voluminous precipitate which is separated, washed with water to remove pyrogallol, and finally with alcohol.

It is a reddish-brown, almost tasteless powder, insoluble in water, alcohol, etc.

It does not show the spectroscopic absorption bands of hemoglobin between D and E.

Actions and Uses.—It is claimed that hemogallol acts as a preparation of organic iron (see Organic Iron).

It is claimed to be useful in anemia, chronic nephritis, and convalescence.

Dosage.—0.25 to 0.5 Gm. (4 to 8 grains), one-half hour before meals in powder with sugar or in tablets.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 541,096 (June 18, 1895; expires 1912).

HEMOGLOBIN—Hæmoglobinum.—Hæmoglobin, Hæmatocrystallin. Hemoglobin is the red coloring matter of blood.

Hemoglobin is a brownish-red powder, soluble in water. It is decomposed by extremely small amounts of acids, coagulates at 64° C. (147.2° F.) and is dextro-rotatory. It does not give characteristic albumin or iron reactions until decomposed. A solution mixed with a little sodium chlorid, evaporated over sulphuric acid to a syrupy consistence, mixed with 15 times its volume of glacial acetic acid and heated on a water bath for several hours, yields on cooling flat rhombic crystals of haematin hydrochloride with a dark violet-red color and metallic luster.

Action and Uses.—See organic iron. It is converted into hematin in the stomach.

Dosage.—0.3 to 2 Gm. (5 to 30 grains).

HEMOL—Hæmolum.—Reduced Hemoglobin—Parahemoglobulin—Hemoglobin Deoxidized by Zinc, Merck.—Hemol is an organic iron compound produced from blood by reduction, said to contain about 3 per cent. of iron in organic combination.

Neutralized blood is shaken with zinc dust and water, and the zinc removed from the product of the reduction (Zinc parahemoglobulin).

Hemol is a dark-brown, almost tasteless powder, insoluble in water, alcohol, etc. It contains traces of zinc oxide. The amount of iron may be determined by the method described in Merck's Prüfungsvorschriften für die pharmazeutischen Spezial-Präparate.

Actions and Uses.—It is claimed to have the action of an organic iron compound.

Hemol is claimed to be useful in anemia, chlorosis, etc.

Dosage.—0.12 to 0.5 Gm. (2 to 8 grains) in powder with sugar or in wafers.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 541,033 (July 2, 1895; expires 1912).

HEXAMETHYLENAMINE AND HEXAMETHYLENAMINE COMPOUNDS

Hexamethylenamine is official in the United States Pharmacopeia. For description see the pharmacopeia, or the Physician's Manual of the United States Pharmacopeia and National Formulary.

AMINOFORM.—A name applied to Hexamethylenamina, U. S. P.

Sold by C. Bischoff & Co., New York.

FORMIN.—A name applied to Hexamethylenamina, U. S. P.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

UROTROPINE.—A name applied to Hexamethylenamina, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. trademark No. 58,394.

HEXAMETHYLENAMINE METHYLENCITRATE—*Hexamethylenaminæ Methylencitras.*—Hexamethylenamine methylencitrate, $C_6H_8O_7(CH_2)_6N_4 = C_{12}H_{20}O_7N_4$, is a compound of hexamethylenamine with anhydromethylencitric acid.

It is a white, crystalline powder, melting with decomposition at 165° to 175° C. (329° to 347° F.), having an agreeable, acidulous taste and acid reaction. It is soluble in about 10 parts of water, but almost insoluble in alcohol and ether. By dilute acids and more easily by alkalies it is decomposed with the liberation of formaldehyde. On addition of 1 per cent. solution of phloroglucin to a solution of hexamethylenamine methylencitrate, followed by sodium hydroxide, the intense rose-red color characteristic of the liberated formaldehyde is developed.

It is incompatible with acids and alkalies.

Actions and Uses.—It is a urinary antiseptic and germicide claimed to be more prompt and energetic in its action than hexamethylenamine, acting equally well whether the urine be alkaline or acid in reaction, rapidly clearing it up and allaying pain.

It is said to be useful in cystitis, pyelitis, prostatic diseases and urethritis. It is also said to be an efficient urinary antiseptic in infectious diseases in which bacteria are present in the urine.

It may be used as a phophylactic against infection in case of operations or instrumental manipulation of the genitourinary tract.

Dosage.—0.6 to 1 Gm. (10 to 15 grains).

Proprietary Preparation.

HELMITOL.—A name applied to Hexamethylenamine Methylencitrate.

Manufactured by Farbenfabriken, vorm. Friedr, Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 722,275 (March 10, 1903; expires 1920). U. S. trademark No. 39,580.

Helmitol Tablets, 5 grains. Each tablet contains helmitol 0.3 Gm. (5 grains).

SALIFORMIN—Hexamethylenaminæ Salicylas, Merck.—Hexamethylenamine salicylate, Merck.—Saliformin is hexamethylenamine salicylate, $(CH_2)_6N_4C_6H_4.OH.COOH$, a weak salt of hexamethylenamine and salicylic acid.

It is prepared by dissolving equal weights of hexamethylenamine and salicylic acid in water and evaporating the solution to dryness at a temperature below 60° C. (140° F.).

It is a white, crystalline powder, having an acidulous and disagreeable taste, readily soluble in water or alcohol.

It is soluble in cold sulphuric acid without color, becoming crimson on heating. Its aqueous solution is colored deep green by copper sulphate, violet by ferric chloride, and forms a yellow precipitate with bromine.

It is decomposed by basic substances (soluble hydroxides, carbonates, etc.) and by strong acids. It is incompatible with salts of iron and other metals which form insoluble compounds with salicylates.

Actions and Uses.—Saliformin is recommended as a genitourinary antiseptic and uric-acid solvent. Its action does not differ materially from that of a mixture of hexamethylenamine and salicylic acid, for it is largely hydrolysed into its constituents in the presence of water.

IODOFORMOGEN — Iodoformalbumen. —Iodoformogen is a nearly odorless mixture of iodoform and albumin.

It is prepared by precipitating a solution of albumin with alcoholic solution of iodoform and heating the precipitate at 120° C. (248° F.).

It is a very fine, voluminous, light-yellow, nearly odorless powder, non-hygroscopic and non-conglutinating. It is insoluble in water, and sterilizable at 100° C. (212° F.) without decomposition or change. It contains about 12 per cent. iodine.

Actions and Uses.—Its action is that of iodoform, which is slowly liberated when it is in contact with wound surfaces, making the action more persistent. It limits secretion, favors granulation and promotes drying.

Iodoformogen is recommended by the manufacturer as a dusting powder for ulcerated surfaces.

Dosage.—Being about three times as voluminous as iodoform, it is usually applied undiluted to the affected parts. It may be used as a snuff in ozena, mixed with an equal amount of boric acid.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany and New York. German patent No. 95,580. *U. S. trademark* No. 31,186.

IODO-MANGAN — Liquor Ferro-Mangani Iodopeptonati "Dieterich."—Iodo-mangan is Ferromangan Dieterich with the addition of 1 per cent. of iodopeptone.[1] Iodopeptone contains 15 per cent. of iodine.

The process of preparation is the same as that given under Ferro-Mangan "Dieterich," with the addition of a solution of iodopeptone.

Iodo-mangan is a clear dark-brown liquid of agreeable odor and taste, and a slight acid reaction.

Method of Valuation: After determination of the percentage of iron and manganese a test method should be employed, as described by Dr. Karl Dieterich in Helfenberg Annals, 1901, pages 162-165, to ascertain the percentage of halogens in Iodopeptone: About 0.5 iodopeptone should be thoroughly mixed with a few grams of a mixture of 1 part potassium nitrate and 2 parts sodium carbonate either in a porcelain or platinum crucible. The mixture is then covered with a light layer of sodium carbonate, covered and carefully heated until reaction sets in. When finished a little potassium nitrate is added to obtain a smooth flux, then the molten mass is exposed to glowheat for about 15 minutes. After cooling it is dissolved in hot water, rinsed into a beaker, filtered if necessary, acidulated dith diluted acetic acid and any iodate reduced with sulphurous acid. The excess of acid is driven off by heat, the liquid strongly acidulated with nitric acid, again heated, until the gas formation ceases, then precipitated while hot with silver nitrate. The silver iodide is collected on a weighed filter, washed with very dilute ammonia water, as the preparation contains hydrochloric acid, dried and weighed.

Actions and Uses.—It is claimed to be a reconstructive tonic and blood making adjuvant, with favorable action in affections of the glandular system.

Iodo-mangan is said to be useful in scrofulosis, rheumatism, etc.

Dosage.—4 to 16 Cc. (1 to 4 fluidrams), according to age, three times a day.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany. (Reinschild Chemical Co., New York.) No patents. U. S. trademark No. 57,870.

IODONE.—Iodonum—Iodone $(C_6H_4C_2O_2)_2 KI.I_4$, is a periodide of phthalic acid anhydride.

Iodone is prepared by treating a solution of phthalic-acid anhydride in acetic ether, with a solution of iodine and potassium iodide, and crystallizing the product from suitable solvents.

Iodone occurs in the form of dark green prismatic crystals which melt with decomposition at 163° C. (325.4° F.). When freshly prepared it is odorless, but on standing, traces of iodine are liberated, giving it a faint odor of iodine. It is gradually decomposed into phthalic acid, iodine, and potassium iodide by water, in which the decomposition products dissolve until a saturated iodine potassium iodide solution results. Any excess of iodine remaining in contact with the supernatant liquid remains unchanged. Alcohol, chloroform, and ether decompose iodone, but more slowly than water. Iodone crystals are stable in dry air; exposed to damp air, they gradually liberate iodine.

When 0.1 Gm. iodone is heated in a crucible at not more than a dull red heat, the compound chars, iodine vapor is driven off, and a residue of white potassium iodide remains. At a bright red heat the latter is dissipated, leaving no weighable residue (absence of metallic impurities).

About 0.1 Gm. iodone, accurately weighed, is allowed to react, with occasional agitation, with a solution of 1 Gm. potassium iodid in 50 c.c. water. At the end of 15-20 minutes the titration of this solution with tenth-normal thiosulphate solution should indicate the presence of not less than 51.1 per cent. iodine.

Iodone surgical dressing and dusting powder, assayed by the above process, should yield not less than 2 per cent. of available iodine. (About 2.5 Gm. should be taken for the assay.)

Actions and Uses.—Like iodine, iodone is a potent germicide and stimulant to the processes of repair in wounds. It is said to be useful in all conditions in which the local use of iodine is indicated.

Dosage.—Iodone is not used in substance but the employment of its preparations should be regulated on the basis of their iodine content.

Manufactured by the Henry C. Blair Co., Philadelphia, Pa. U. S. patent applied for. Not trademarked.

Iodone Oil—Oleum Iodoni.—Iodone oil is a 2 per cent. solution of iodone crystals in a mixture of alcohol, castor oil, and cotton seed oil. It is said to yield about 1 per cent. of iodine, slowly liberated on prolonged contact with moisture and to contain about 20 per cent. alcohol.

Iodone oil is prepared by dissolving iodone crystals in a mixture of alcohol and oils to which sufficient iodine has been added to overcome the decomposing effects of the solvent on iodone.

It is a clear dark reddish-brown oily liquid, having a specific gravity of about 0.912 at 25° C. (78° F.) and a faint alcohol-like odor.

When shaken with chloroform and water the chloroform acquires a violet color, which is decolorized by shaking with a solution of sodium thiosulphate.

If 5 Cc. of the oil is dissolved in 15 Cc. of chloroform and treated as under iodone ointment, considerable time being allowed during the titration for the complete liberation of the iodine (at least twenty-four hours), about 1 per cent. iodine, calculated from the volume of volumetric sodium thiosulphate solution, should be indicated.

Actions and Uses.—Iodone oil has the germicidal and alterative actions due to the iodine which is liberated on contact with moisture.

It is said to be useful in all catarrhal affections of mucous membranes, hay fever, etc.

Dosage.—Its employment should be regulated on the basis of its liberating 1 per cent. of iodine on contact with moisture. It may be applied as a spray or on pledgets of cotton or tampons. It can be injected hypodermically into tuberculous joints, etc.

Iodone Ointment—Unguentum Iodoni.—Iodone ointment is a mixture of iodone crystals with petrolatum, said to contain about 4 per cent. of iodine and to yield about 2 per cent. of available iodine slowly liberated on contact with moisture.

Iodone ointment is a dark green unctuous mass, having the consistency of petrolatum and a faint iodine-like odor.

A small amount dissolved in chloroform in a test tube and shaken with water should impart to the chloroform a violet color, which is destroyed by addition of sodium thiosulphate solution.

If 2 to 3 Gm. of iodone ointment be weighed and dissolved in 15 Cc. of chloroform and 30 Cc. of water added, the mixture shaken frequently during one hour, and titrated with tenth normal sodium thiosulphate solution using starch as indicator, not less than 2 per cent. of iodine should be indicated.

Actions and Uses.—Iodone ointment has germicidal, alterative and stimulant powers due to the iodine liberated.

It is said to be useful in all conditions in which the local use of iodine in ointment is indicated.

Dosage.—Its employment should be regulated on the basis of the liberation of 2 per cent. of available iodine on contact with moisture.

Iodone Surgical Dressing and Dusting Powder—Pulvis Iodoni Compositus.—Iodone surgical dressing and dusting powder is a mixture of four parts of iodone and 96 parts pure sterile talcum.

Dosage.—Its employment as a surgical dressing and dusting powder should be regulated on the basis of its containing 2 per cent. of available iodine, slowly liberated on contact with the moisture of wound secretions, etc.

IOTHION — Di-Iodo-Hydroxy-Propane. — Iothion is 1,3-di-iodo-propane-2-ol $CH_2I.CHOH.CH_2I = C_3H_6OI_2$.

Dichlorhydrin, obtained by chlorinating glycerin, is heated with the theoretical quantity of potassium iodide in the presence of water, chlorine being replaced by iodine with the production of di-iodo-hydroxy-propane.

Iothion is a yellowish, oily, heavy liquid, of sp. gr. 2.4 to 2.5, containing 77 per cent. of iodine. It is volatile at the body temperatu [illegible] unpleasantly odorous. It is insoluble in water but so [illegible] alcohol and other organic solvents. It is [illegible] weak alkalies.

If Iothion be heated on the water bath under a reflux condenser for 5 to 6 hours, with 33 per cent. solution of potassium hydroxide and the iodine liberated from the residue by sulphuric acid and sodium nitrite and extracted with carbon disulphide, the titration of this iodine carbon disulphide solution with sodium thiosulphate in the usual way, should indicate 77 per cent. of iodine.

Actions and Uses.—Iothion acts like iodine and the iodides, but it is said to be rapidly absorbed by the intact skin.

It is said to be a satisfactory substitute for iodine and iodides. It is applied to the surface of the body in the same manner as mercurial inunctions.

Dosage.—It is applied in the form of a 25 to 50 per cent. ointment with a mixture of equal parts of wool fat (lanolin) and petrolatum as a base.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. trademark No. 39,252.

KEFIR FUNGI—Kefir fungi is a mixture of bacteria and yeasts capable of causing lactic acid fermentation of milk.

Kefir occurs in the form of white irregular roundish bodies, of the size of a walnut, with a very rough, furrowed surface, and of a tough gelatinous consistency. The substance contains Saccharomyces cerevisiæ (Heyden), Bacillus acidi lactici (Pasteur),

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[1] Iodomangan formerly contained 0.45 per cent. of iodopeptone.

Dispora Caucasica (Kern). It acts on milk as follows: Fat, salt and water of the milk remain unaffected. The lactose is gradually decreased and the lactic acid increased. Alcohol is produced along with carbon dioxide. 10 per cent. of the casein is converted into acid albumin and peptones, 10 per cent. into hemialbumose and the rest loses its lime. (U. S. Disp., 19th ed., p. 1540.)

Action and Uses.—Kefir fungi are used for the preparation of fermented milk which contains lactic acid, alcohol, the fats, salt and water of the milk. Kefir milk acts as an easily digestible food in many cases of dyspepsia and lack of digestive power. It is also serviceable in some cases in the prevention of intestinal putrefaction.

Dosage.—Kefir kumyss may be prepared by adding active kefir grains to fresh cows' milk, kept at a temperature of 21°-27° C. (70° to 80° F.) until the effect of fermentation becomes apparent by the rising of the grains to the surface. The grains may then be strained off, and the milk, which now contains sufficient yeast-cells to insure continuance of the fermentation, left to itself in well-corked bottles.

KERATIN—Keratinum.—Keratin is a proteid substance which forms the chief part of horns, hoofs, feathers, wool, etc.

To prepare keratin horn shavings are macerated for some days in a mixture of equal parts of ether and alcohol; decanting the liquid and washing the residue with warm water. The washed shavings are then treated with an acid solution of pepsin at 40° C. (104° F.). After further washing with water the residue is dried and powdered.

Keratin occurs as a brownish yellow powder or in transparent white or grayish white scales, tasteless and odorless. It is soluble in concentrated acetic acid, caustic alkalies and ammonia, but insoluble in water, alcohol, ether, dilute acetic acid or acid pepsin solutions. It is decomposed by long boiling under pressure forming a turbid solution with the liberation of hydrogen sulphide. Boiling with dilute sulphuric acid converts it to leucine, tyrosine and other products. On ignition it emits the odor of burning feathers and the remaining carbon is very difficultly burned. On complete combustion the ash should not exceed 1 per cent. 24 hours' digestion with 15 times its volume of ammonia or glacial acetic acid solution at 25°-40° C. (77°-104° F.) should not leave more than 0.3 per cent. insoluble matter.

Uses.—For coating pills to pass the stomach unchanged.

LACTOPHENIN — Lactopheninum. — Phenetidinum lactylatum (Pharm. Helvetica. edit. 4)—Lactylparaphenetidin.—Lactophenin is lactylparaphenetidin. $C_6H_4.OC_2H_5.NH(CH_3.CHOH.CO{=}C_{11}H_{15}NO_3$. a phenetidin derivative differing from acetphenetidine (Phenacetin) in that the acetic-acid radicle of acetphenetidine is replaced by the lactic-acid radicle (lactyl).

It is prepared by heating lactic acid and paraphenetidin. in molecular proportions, at 180° C. (356° F.) until all the liberated water is expelled and crystallizing the product from hot water

Lactophenin occurs as a white, crystalline, odorless powder, of slightly bitter taste and neutral reaction. It melts at 117.5° to 118° C. (243.5° to 244.4° F.). It is rather difficultly soluble in cold water (1:330), and is soluble in 55 parts of boiling water. It is soluble in 8.5 parts of alcohol, and is not precipitated from this solution by water. In ether and petroleum it is difficultly soluble.

On boiling 0.2 Gm. of lactophenin with 2 Cc. hydrochloric acid for one minute, then diluting the solution with 20 Cc. water, and filtering when cold, the filtrate will become colored a ruby red on the addition of chromic acid solution.

On dissolving 0.1 Gm. lactophenin in 10 Cc. hot water, and filtering when cold, the filtrate, on the addition of bromin water, should afford a decided turbidity which disappears on the addition of much water.

The aqueous solution of lactophenin must not have an acid reaction.

No blue coloration should develop on adding potassium dichromate solution to the cold aqueous solution of lactophenin (absence of phenetidin salts).

Lactophenin should dissolve in concentrated sulphuric acid in the cold without coloration (absence of foreign organic mixtures), and on incineration should leave no weighable residue (absence of inorganic admixtures).

Actions and Uses.—Lactophenin is an antipyretic and analgesic similar to acetphenetidin (phenacetin). It is claimed that it has a more marked action as a hypnotic than acetphenetidin (phenacetin) and that at the same time respiration and circulation remain unchanged. It is also claimed that the lactic acid constituent is more easily separated from the compound than is the case with the acetic acid radicle of acetphenetidin. It is stated that the preparation is absorbed from the stomach to a large extent, so that the activity of the doses given reaches its maximum in a short time.

The therapeutic indications of lactophenin are similar to those of acetphenetidin (phenacetin). It is claimed by the manufacturers to be particularly valuable in the treatment of typhoid fever on account of its combined antipyretic and sedative properties. On the other hand, it is the general opinion that antipyretics should not be used in the treatment of typhoid fever unless under very exceptional circumstances. In the opinion of good authorities the action and uses of lactophenin do not materially differ from those of acetphenetidin (phenacetin).

Dosage.—The initial dose is 0.5 Gm. (8 grains) for adults and the maximum daily dose 3 to 5 Gm. (45 to 75 grains).

Manufactured by C. F. Boehringer & Soehne, Waldhof near Mannheim, Germany (Merck & Co., New York). U. S. patent No. 503,743 (expired). U. S. trademark No. 24,643.

LECITHIN PREPARATIONS

LECITHIN.—Lecithin consists of the esters of oleic, stearic, palmitic or other fatty acid with glycerophosphoric acid combined with cholin; occurring in combination with proteids in many animal and vegetable tissues, especially in nervous matter and egg-yolk.

Lecithin is best prepared from egg-yolk (in which it exists as vitellin) by dissolving out the lecithin by strong alcohol.

It is a yellowish-brown, waxy solid of peculiar odor, soluble in an equal volume of cold absolute alcohol, readily soluble in chloroform, petroleum, benzin, and fats, less readily in ether. It is insoluble in water, but swells, giving the peculiar "myeline forms," and decomposes on prolonged contact. It is hygroscopic on exposure to air.

The alcoholic solution is precipitated by platinum or cadmium chloride. It is decomposed by alkalies with the formation of cholin and trimethylamine. The ash contains phosphoric acid. The different lecithins contain from 3.84 to 4.12 per cent, of phosphorus and 1.73 to 1.86 per cent. of nitrogen. The ratio of nitrogen to phosphorus should be as 1 to 2.21.

Lecithin is incompatible with alkalies; it should be kept in well-stoppered bottles and should be protected from the light.

Actions and Uses.—Lecithin is supposed to act as a stimulant to nutrition and not as a direct nutrient, and to increase the number of the red blood corpuscles and the amount of hemoglobin. Some investigators state that there is a slight increase in the proportion of large mononuclear leukocytes, that the appetite is improved, that there is a retention of nitrogen and a diminution in the excretion of phosphoric and sulphuric acids, indicating a storage of proteids, and that uric acid is perhaps slightly diminished. Lecithin, even in large doses, is not toxic. (See note under Creosote Carbonate.)

The ordinary diet contains from 5 to 15 Gm. (75 to 225 grains), and some observers claim that the benefits of the administration of lecithin can be obtained by an increased use of lecithin-containing food (eggs, etc.), but others claim that the raw or combined lecithin is ineffective.

Dosage.—It may be given by mouth in doses of 0.1 to 0.5 Gm. (1.5 to 8 grains) per day, in pill form, before meals, or, hypodermically 1 Cc. (15 minims) of a 5 per cent. solution in oil. daily. Infants, one-third of these doses.

GLYCEROLE OF LECITHIN—Glyceritum Lecithini.—Glycerole of lecithin is a solution of lecithin in pure glycerin, containing in each 100 Cc., 1.6 Gm. of pure lecithin.

Actions and Uses.—See Lecithin.

Dosage.—4 Cc. (1 fluidram) containing 0.06 Gm. (1 grain) of lecithin.

Manufactured by Fairchild Bros. & Foster, New York. Not patented or trademarked.

LECIBRIN.—Lecibrin is lecithin from the brain in combination with nucleoproteins, containing 33⅓ per cent. by weight of lecithin.

Lecibrin is put up in gelatin coated "pepules," each containing 0.2 Gm. (3 grains), the equivalent of 0.0027 Gm. (1/25 grain) of elementary phosphorus.

Actions and Uses.—See Lecithin. Said to be better borne than lecithin in some cases.

Dosage.—One to three pepules.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 50,967.

LECITHIN SOLUTION.—A solution of lecithin containing 1.6 Gm. of lecithin in 100 Cc. of a glycerin-alcoholic menstruum containing 18.5 per cent. of alcohol by volume.

Actions and Uses.—See Lecithin.

Dosage.—4 Cc. (1 fluidram), containing 0.06 Gm. (1 grain) of lecithin.

Manufactured by Fairchild Bros. & Foster, New York. Not patented or trademarked.

LECITHOL.—An emulsion-like solution of lecithin containing 18 per cent. of absolute alcohol by volume, and .06 Gm. (1 grain) of lecithin per 4 Cc. (1 fluidram).

The lecithin is separated from hogs' brains.

An opalescent yellow liquid of pleasant taste and odor.

Test: From lecithol, 10 Cc., the alcohol is removed by evaporating on the water-bath; then water, 90 Cc., is added. Next concentrated hydrochloric acid, 2 Cc. is added, and then, with thorough shaking, gradually 2 Cc. chloroform. The liquid precipitate which separates out, containing nearly all the lecithin, is collected and treated with strong sulphuric acid and fuming nitric acid. After all the organic matter is decomposed, the phosphorus is determined in the usual way. From this the percentage of lecithin is calculated.

Actions and Uses.—See Lecithin.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) immediately before or after meals.

Manufactured by Armour & Co., Chicago.

NEURO-LECITHIN-Abbott. — Neuro-lecithin-Abbott is a preparation of lecithin with small amounts of fats and cholesterin, the amount of lecithin being determined by assay.

Neuro-lecithin is said to be made from the brain and spinal cord of animals. The water and fat are separated by heat; the soluble portions are extracted from the residue with ether; this is precipitated with acetone.

For properties and tests see Lecithin. The amount of lecithin is determined by a quantitative estimation of phosphorus and nitrogen. The material is exhausted with ether-alcohol at the boiling point of the mixture, the solution evaporated, the residue fused with sodium carbonate and potassium nitrate and phosphorus determined in the fusion. The amount of phosphorus found multiplied by 26 (806/31) is taken to indicate the amount of lecithin.

Actions, Uses and Dosage.—See Lecithin.

Manufactured by the Abbott Alkaloidal Co., Chicago. U. S. trademark No. 65,384.

Neuro-Lecithin Tablets-Abbott.—Each tablet contains neuro-lecithin 0.03 Gm. (½ grain).

Neuro-Lecithin Pills-Abbott.—Each pill contains neuro-lecithin 0.03 Gm. (½ grain).

LENIGALLOL—Pyrogallol Triacetas. — Triacetylpyrogallol. Lenigallol is pyrogallol triacetate, $C_6H_3(CH_3CO_2)_3 = C_{12}H_{12}O_6$, obtained by replacing the hydroxyl groups of pyrogallol with acetyl groups.

It is prepared by boiling 10 parts of pyrogallol, 1 part of sodium acetate, and 25 parts of acetic anhydride for 2 hours, and washing the crystalline product on a filter with water.

It is a white, crystalline powder, melting at 165° C. (329° F.). It is insoluble in water, but soluble with decomposition in warm aqueous alkalies.

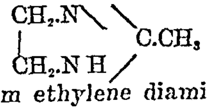
It is incompatible with alkalies, strong acids and oxidizing agents

Actions and Uses.—Lenigallol is said to be non-poisonous and non-irritating, but a mild and painless corrosive. (See note under Creosote Carbonate.)

It is introduced as a substitute for pyrogallol in psoriasis, lupus, acute and subacute eczema of children and other skin diseases.

Dosage.—In 5 to 10 per cent. ointment with zinc oxide.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany. German patent No. 105,240.

LYSIDIN.—Lysidin is a 50 per cent. solution of ethylene-ethenyl-amidine,  $\begin{matrix} CH_2.N \diagdown \\ | \qquad\quad C.CH_3 \\ CH_2.NH \diagup \end{matrix} = C_4H_8N_2$, a monatomic base derived from ethylene diamine.

It is prepared by subjecting ethylenediamine hydrochloride and sodium acetate to dry distillation, decomposing the hydrochloride of the new base with concentrated potassium hydroxide and crystallizing.

It forms small, colorless, very hygroscopic needles, melting at 105° to 106° C. (221° to 222.8° F.). It is very soluble in water and in alcohol forming alkaline solutions; it is also soluble in chloroform, but insoluble in ether. It forms a very soluble salt with uric acid.

It should form a clear and colorless solution and give the usual alkaloidal reactions.

Being a strong base it is incompatible with acids and with the salts of many metals and of the alkaloids, which it decomposes.

Actions and Uses.—Lysidin is said to be a diuretic and is recommended as a uric acid solvent on the theory that, because it forms a very soluble salt with uric acid, it will facilitate the elimination of that substance. It is claimed that it is superior to piperazine.

It is said to be useful in gout, lithiasis and the various forms of the so-called uric acid diathesis.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

MASSOLIN—Cultura Bacilli Bulgarici-Lederle.—Massolin is a pure culture of the *Bacillus bulgaricus* of Massol, grown on *one of the following media:* Calcium carbonate lactose broth, calcium carbonate dextrose broth, calcium carbonate Cohendy broth, or Cohendy broth.

The material for one of the above broths is sterilized for thirty minutes on three successive days and then placed in the incubator for at least forty-eight hours to determine its sterility before using. The material is then put into large flasks, inoculated from test tube cultures of the bacillus and incubated at 37° C. (98.5° F.) for from twenty-four to ninety-six hours. It is then tested to see that it is free from contaminating organisms.

The preparation is of an amber color and has the odor and taste of the particular medium employed as its base.

The material should be inoculated into milk and into the above media in test tubes and smeared on Cohendy agar. The cultures should be examined microscopically for the detection of contaminating organisms.

Actions and Uses.—The culture tends to prevent the growth of putrefactive and pathogenic organisms. It is said to be useful in the treatment of suppurative conditions and is said to have been found especially beneficial in atrophic rhinitis, chronic nasal catarrh, inflammations of the frontal sinus, antrum, ethmoidal cells, middle ear, etc.

Dosage.—The culture should be liberally applied directly to the diseased area and in ordinary nose and throat affections the contents of one bottle, 7.5 Gm. (¼ ounce) may be employed at each treatment.

Manufactured by Lederle Antitoxin Laboratories, New York (Schieffelin & Co., New York).

No patent or trademark. U. S. Government License No. 17.

MEDICINAL FOODS

The so-called "Liquid Foods," "Medicinal Foods" or "Predigested Foods," as found on the market, are solutions containing as the essential constituents small amounts of protein substances and carbohydrates, preserved by alcohol.

The protein substances should be rendered soluble, i. e., converted to peptones and proteoses, by means of enzymes. While the hydrolysis of proteids to soluble proteoses may also be effected by means of acids or superheated steam, these products should be excluded from medicinal foods because of the uncertainty as to their composition and behavior—being held toxic and dangerous by some. The protein content of these liquid medicinal foods (obtained by multiplying the total nitrogen content by 6.25) ranges from 0.5 to more than 6 per cent. The carbohydrates present in these foods are sucrose (cane sugar), maltose, glucose, invert sugar, dextrin and possibly also lactose (milk sugar). In these foods, as found on the market, the quantity of carbohydrates ranges from 0.55 to more than 15 per cent. The alcohol content varies from 12.0 to 19 per cent. of absolute alcohol by weight. Some contain large amounts of glycerin.

Actions and Uses.—The value of medicinal foods depends on the proteins and carbohydrates contained therein. Glycerin does not, so far as known at present, possess any recognized food value, although there are a number of experiments on record to indicate that it influences metabolism. While the value of alcohol in the treatment of disease is fully appreciated, its value as a food product, pure and simple, in disease is an open question. It probably acts as a saver of fat and carbohydrate, but not as a tissue builder. The nutritive value of these medicinal foods, therefore, should be considered as based on their carbohydrate and protein content, exclusive of alcohol or glycerin. The calculated food value of a considerable number of medicinal foods, on the basis of the potential energy (calorific value) due to proteins and carbohydrates shows that some possess but one-sixth the value of milk, while the best have a trifle greater calorific value. The Council has decided that no liquid medicinal or predigested food be given consideration which contains less nutritive value, exclusive of alcohol and glycerin, than milk; and at least one-fourth of this should reside in nitrogenous constituents.

Dosage.—None of the commercial liquid medicinal or predigested foods contains sufficient food material to maintain normal nutrition. A man doing moderate work requires an amount of food which furnishes energy to 3,000 calories per day, and while, in sickness, this amount is not required, it should not fall much below 1,500 calories per twenty-four hours. The examination of commercial liquid food shows that the average daily dose recommended supplies from 10 to 111 calories based on protein and carbohydrate. To sustain the vitality of a patient during a serious illness, 2,000 Cc. of milk, giving about 1,430 calories, are required; to supply the same number of calories, even if the alcohol is considered to have direct food value, from 700 to 1,500 Cc. of the medicinal foods will be required. In many cases the amount of alcohol exhibited by these quantities would keep the patient in an alcoholic stupor continually. It should, therefore, be remembered that the patient is receiving a starvation diet when these preparations are given in ordinary doses. Unless the daily dose advised contains at least 100 calories, exclusive of alcohol and glycerol, a preparation should not be depended on as of noteworthy importance in helping to sustain life even for a very limited period.

DEXTROSE.—Saccharum Amylaceum.

Dextrose, $C_6H_{12}O_6 + H_2O$, is a carbohydrate prepared by the action of dilute acids on starch; it also occurs naturally.

Dextrose containing a molecule of water of crystallization occurs in white crystalline masses. It is soluble in its own weight of water at 15° C. (59° F.); in 50 parts alcohol (85 per cent.) at 17° C. (62.6° F.) and in 11 parts at the boiling temperature.

An aqueous solution (1-10) of dextrose should yield after the addition of dilute nitric acid not more than a slight turbidity with either barium nitrate or silver nitrate; and after the addition of ammonia should produce no precipitate with ammonium oxalate.

An aqueous solution (1-20) of dextrose should not change when heated with hydrogen sulphide.

Actions and Uses.—Dextrose is quite readily digested and may be used in place of cane sugar as a food.

Dosage.—180 Gms. (6 oz.) daily.

DRY PEPTONOIDS.—Dry peptonoids is stated to contain 40 per cent. of proteins and 53 per cent. of carbohydrates.

It is said to be made from beef, milk and wheat, by digesting the protein with pepsin and pancreatin and the carbohydrates with pancreatin and malt diastase. The resultant solutions are assayed, mixed in proper proportions and, the acid used in the digestion having been neutralized, concentrated *in vacuo*, sterilized, dried and brought to uniform composition by the addition of milk sugar.

It consists of light brown granules of pleasant odor and taste and is very soluble in water and other fluid media.

Actions and Uses.—See Medicinal Foods. The nutritive value of 500 Gm. of Dry Peptonoids corresponds to approximately 2,000 calories, of which 870 are due to protein and 1,130 to carbohydrates and fat. The largest dose usually given (16 Gm.) equals, therefore, almost 64 calories. It is claimed to be especially useful for nutrient enemata.

Dosage.—For an adult 8 to 16 Gm. (¼ to ½ ounce), taken in water, milk, wine, broths, soups, etc., also in gruels, in which case it should first be dissolved in a small quantity of water.

Manufactured by the Arlington Chemical Co., Yonkers, N. Y. U. S. trademark. Oct. 17, 1882.

LIQUID PEPTONOIDS.—Liquid peptonoids contain 4.5 to 5 per cent. nitrogenous matter (nitrogen x 6.25), 10.6 to 11.5 per cent. carbohydrates (glucose, lactose and sucrose) and 17.5 to 17.8 per cent. alcohol by volume (14 to 14.1 by weight).

It is said to be made from beef, milk and wheat by digesting the protein with pepsin and pancreatin and the carbohydrates with pancreatin and malt diastase.

It is a light brown fluid of aromatic taste and odor and acid in reaction. Its specific gravity is 1.047 to 1.049.

Actions and Uses.—See Medicinal Foods. The nutritive value of 500 Gm. of Liquid Peptonoids corresponds to 335 to 345.1 calories, of which 108.7 to 118.3 are due to protein and 216.7 to 236.4 to carbohydrates. The same quantity of milk represents 360 calories, of which 84 are due to protein and 98.4 to carbohydrates.

Dosage.—15 to 30 Cc. (4 to 8 fluidrams) from 3 to 6 times a day. Children in proportion.

Manufactured by the Arlington Chemical Co., Yonkers, N. Y. U. S. trademark.

LEVULOSE-Schering — Levulosum-Schering. — Fruit Sugar —Fructose.—Levulose Schering is a pure, crystallized fructose (levulose), $CH_2OH.CHOH.CHOH.CHOH.CO.CH_2OH = C_6H_{12}O_6$, absolutely free from dextrose (ordinary glucose).

It is prepared from invert sugar by precipitation as calcium salt, decomposing the precipitate with carbonic acid, and crystallizing. It is a colorless, odorless, slightly hygroscopic, crystalline powder, having a sweet taste compared with that of ordinary cane sugar (saccharose). It is readily soluble in water and in diluted alcohol, slightly soluble in alcohol, insoluble in absolute alcohol and in ether.

Its aqueous solution reduces Fehling's solution and rotates the ray of polarized light to the left.

Actions and Uses.—Levulose is in part at least metabolized in the body by other agencies than those that act on dextrose and most of the other sugars and appears to be sometimes more completely utilized by the diabetic organism than the other sugars.

It has been recommended for the nutrition and for sweetening the food and drink in suitable cases of diabetes, in pulmonary tuberculosis, infantile malnutrition and marasmus.

Dosage.—It is given in diabetes in daily quantities of 30 to 60 Gm. (1 to 2 ounces): in grave forms of the disease the amount is reduced to from 12 to 24 Gm. (3 to 6 drams) daily.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. trademark No. 21,864

NUTROSE — Sodii Caseinas. — Sodium Caseinate — Casein-Sodium.—Nutrose is a sodium salt of milk casein, containing 65 per cent. of proteids.

It is prepared by dissolving moist casein, freshly precipitated from skimmed milk and washed with water, in solution of sodium hydroxide, evaporating the solution to dryness *in vacuo*, powdering the residue, washing it successively with alcohol and ether, and drying.

It is a coarse, white, odorless and tasteless powder, forming a turbid, adhesive solution with water, having an alkaline reaction toward litmus, but being acid toward phenolphthalein.

Incinerated on platinum foil, it evolves vapors similar in odor to burning horn and leaves at least 3 per cent. of a white, nonvolatile residue, which has an alkaline reaction and colors the Bunsen flame yellow. Casein can be detected by the biuret reaction.

It is incompatible with acids.

Actions and Uses.—Nutrose has been recommended as a nonirritant nutrient in wasting diseases, such as the cachexias in carcinoma, anemia, diabetes, etc., and in acute and chronic febrile ailments, such as pneumonia, typhoid fever and tuberculosis.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). German patent No. 85,057.

PANOPEPTON.—Panopepton contains 6.33 to 6.38 per cent. of nitrogenous matter (nitrogen x 6.25), 10.05 to 11.92 per cent. of carbohydrates and 17 to 20.9 per cent. alcohol by volume (15 to 18.5 per cent. by weight).

It is said to be prepared from beef and wheat by digestion with gastric and pancreatic juices. The substance obtained by the digestion is mixed in fixed proportion of protein and carbohydrate, sterilized, concentrated *in vacuo* and dissolved in fortified Spanish sherry wine.

It is a light brown fluid, acid in reaction and possessing largely the odor and taste of sherry wine. Its specific gravity is 1.063 to 1.023.

Actions and Uses.—See Medicinal Foods. The nutritive value of 500 Gm. of Panopepton corresponds to 359.1 to 396.3 calories, of which 151.9 to 153.1 are due to protein and 244.4 to 206 to carbohydrates. The same quantity of milk represents 360 calories, of which 84 are due to protein and 98.4 to carbohydrates.

Dosage.—8 to 16 Cc. (2 to 4 fluidrams) several times a day and at bedtime; for infants from a few drops to 2 Cc. (30 minims).

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark.

PEPTONE—Peptonum.—Peptonum (Pharm. Belgica., edit. 3); Peptona Medicinalia (Pharm. Française, 1908).

Peptone is a product of the peptic or pancreatic digestion of albuminoid substances.

Peptone may be produced artificially as follows: Mince 1000 parts of lean beef freed from bone, etc., and mix it with 4000 parts of water, to this add a solution of 5 parts of pepsin in 1000 parts of water with 50 or 25 parts of hydrochloric acid. The mixture thus prepared is kept at a temperature not exceeding 50° C. (122° F.) until 10 Cc. of the filtrate or the addition of 1.5 Cc. of nitric acid in the cold no longer produces a precipitate. (Formation of a coagulum indicates incomplete peptonization.) The solution is then filtered, neutralized with sodium bicarbonate and evaporated to dryness *in vacuo*. It may be purified if necessary from adherent sodium chloride by dialysis or by precipitation by alcohol washing with ether and drying. By desiccating its concentrated solution upon plates peptone may be obtained in scales. (Brit. Codex.)

Peptone occurs as a white or yellowish-brown amorphous powder or in scales, with a somewhat cheesy but not unpleasant taste and nearly odorless. The pure substances when added to water hisses and froths at the same time evolving heat. It is soluble in water (1 in 20) forming a neutral solution or slightly acid. Aqueous solutions are pale yellow and clear or may be made quite clear by the addition of a little hydrochloric acid. The addition of alcohol precipitates peptone. Aqueous solutions are not coagulated by heat. No precipitate is formed in aqueous solution on the addition of nitric acid or potassium ferrocyanide (difference from albumen) nor is a precipitate formed by solutions of ferric chloride or cupric sulphate nor by saturation with ammonium sulphate or zinc sulphate (distinction from albumoses). The aqueous solutions are levarotatory. Neutral solutions are precipitated by tannin and by various salts of mercury. Acid solutions give precipitates with bismuth potassium iodide, potassium mercuric iodide, bromine water and other precipitants of alkaloids. Peptone is colored yellow with Millon's reagent on warming a red color and precipitate; with cupric sulphate and caustic alkali a violet-red color (biuret reaction). Picric acid gives yellow flakes. Peptone should not be precipitated by lead acetate, alum or hydrogen sulphide. On ignition it should not yield *more than 2 per cent.* ash.

Action and Uses.—Peptone is given as a nutrient in malnutrition and certain forms of dyspepsia. Its value is limited because larger amounts, often even small quantities, cause irritation.

Dosage.—Peptone is given in the form of pastilles, 5 Gm. in each prepared with gelatine. It is administered in rectal alimentation in the form of suppositories or it may be added to rectal enemata.

MERCURIC BENZOATE—Hydrargyri Benzoas.—Hydrargyrum benzoicum (Pharm. Française, 1908), Mercuric Benzoate, $Hg(C_6H_5COO)_2+H_2O$, is the mercuric salt of benzoic acid.

10 Gm. glacial acetic acid is diluted with 100 Cc. water and 10 Gm. yellow mercuric oxide added and the mixture agitated until solution is effected. 14 Gm. sodium benzoate is dissolved in 100 Cc. water and added to the mercury solution. The precipitate which forms is collected and washed with water till free from acid and dried at 100° C. (212° F.). (Pharm. Française, 1908).

Mercuric benzoate is a white crystalline powder, slightly soluble in water, yielding a weakly acid solution, but insoluble in alcohol or ether. At 20° C. (68° F.) a 10 per cent. solution of sodium benzoate dissolves 1 per cent. of its weight of mercuric benzoate. Heated with alcohol it is decomposed into a basic salt of a yellow color. (Pharm. Française, 1908).

A solution of 1 Gm. mercuric benzoate and 0.5 Gm. sodium chloride in 20 Cc. water yield a black precipitate with hydrogen sulphide and with ferric chloride solution it yields a fawn colored precipitate of ferric benzoate.

A solution produced by shaking 1 Gm. mercuric benzoate with 20 Cc. water should not produce more than a faint turbidity when added to silver nitrate solution, acidified with nitric acid (limit of chloride). 2 Cc. of a similar solution when mixed with ferrous sulphate solution and then concentrated sulphuric acid added so as to form a layer beneath, should produce no brown coloration ta the zone of contact of the two solutions (absence *of nitrates*).

Action and Uses.—The same as mercuric chloride.

Dosage.—Mercuric benzoate has been recommended for hypodermic use and in gonorrhea. In urethral cases the solution may be 1-2000 or 1-1000 with an equal quantity of sodium chloride. For hypodermic injection the following may be given: Mercury benzoate, 0.02 to 0.03 Gm.; sodium chloride, 0.01 Gm.; cocaine hydrochloride, 0.15 Gm.; distilled water, 40 Cc.

MERCURIC CYANIDE—Hydrargyri Cyanidum.—Hydrargyrum cyanatum (Pharm. Française, 1908).

Mercuric cyanide, $Hg(CN)_2$ is the mercuric salt of hydrocyanic acid.

Prussian blue and mercuric oxide in water are boiled until the mixture is brown; the mixture is filtered, acidified with hydrocyanic acid, evaporated and allowed to crystallize in a cool place. It is also prepared by the action of hydrocyanic acid on mercuric chloride. Colorless or white, prismatic crystals, odorless, and having a bitter, metallic taste (the salt is exceedingly poisonous). It is darkened on exposure to light. Soluble at 15° C. (59° F.) in 12.8 parts of water, and in 15 parts of alcohol; in 3 parts of boiling water, and in 6 parts of boiling alcohol; very sparingly *soluble in ether*.

When slowly heated in a glass tube, the salt decrepitates, and decomposes into metallic mercury and inflammable cyanogen gas, which burns with a purple flame. On further heating, the blackish residue, consisting of para-cyanogen with globules of metallic mercury, is wholly dissipated.

If 1 part of the salt be gently heated with 1 part of iodine in a dry test-tube it will produce at first a yellow sublimate which afterwards becomes red, and above this a *sublimate of* colorless, needle-shaped crystals.

On adding hydrochloric acid to the aqueous solution of the salt, the odor of hydrocyanic acid is evolved.

A 5 per cent. aqueous solution of the salt should be neutral to litmus paper, and should *not yield*, on the gradual addition of a few drops of potassium iodide test solution, either a red or a reddish precipitate, soluble in an excess of the precipitant, nor should it yield a white precipitate with silver nitrate test solution (absence of mercuric chloride).

If mercuric cyanide be dissolved in an aqueous solution of sodium chloride the addition of phenolphthalein *to this solution* should produce no red coloration (absence of mercuric oxide).

Ammonia should not color an aqueous solution blue (absence of copper) nor should a solution of copper give a brown color or precipitate (absence of potassium ferrocyanide). The presence of large quantities of potassium sulphate may be demonstrated by igniting, leaching the ash and testing the filtrate with barium. Dilute sulphuric acid should not liberate hydrocyanic acid (absence of potassium cyanide). Ammonia should dissolve mercuric cyanide without producing a white precipitate (absence of oxycyanide). (Pharm. Française, 1908).

Action and Uses.—Mercuric Cyanide has been reported to be as actively antiseptic as mercuric chloride and to be less irritating; but this has been questioned. It is used locally and internally like mercuric chloride.

Dosage.—Internally from 0.004 to 0.008 Gm. (1/16 to 1/8 grain); locally, solutions of 1-4000 to 1-2000 may be used for applications to the eye or mucous membranes; 25 to 35 minims of a 1 per cent. solution may be used hypodermically without causing local irritation. Death has occurred from the use of a vaginal injection containing 0.9 Gm. (14 grains) of mercuric cyanide.

In diphtheria and croup it is used in 0.01 per cent. solution as a gargle or internally in doses of 0.0005 Gm. to 0.001 Gm. (0.0077 to 0.0154 grain). In rhinitis fibrinosa it is used on a tampon in 0.04 per cent. solution.

MERCURIC OXYCYANIDE—Hydrargyri oxycyanidum.—Hydrargyrum oxycyanatum (Pharm. Helvetica, edit. 4).

Mercuric oxycyanide, $Hg(CN)_2.HgO$, is basic-mercuric cyanide.

22.2 Gm. mercuric oxide is triturated with 52 Cc. water and 12 Cc. of sodium hydroxide solution (U. S. P.) and then 27 Gm. of pulverized mercuric cyanide is added and the mixture triturated until it becomes colorless or nearly so. If the product is not entirely decolorized heating on a water bath for a short time will complete the reaction. The mixture is allowed to settle, the liquid portion decanted off and the solid residue recrystallized from hot water or is simply washed several times with cold water, collected and dried between filter papers. (Rupp and Goy, Arch. d. Pharm., 1908, p. 369.)

Mercuric oxycyanide occurs as a white, or nearly white, microcrystalline powder which colors moist litmus paper blue. It is soluble in 17 parts water.

Boiled with a mixture of sodium hydroxide, ferrous sulphate and ferric chloride solutions, cooled and then treated with hydrochloric acid, mercuric oxycyanide yields a blue precipitate. A 1 to 20 solution gives a white precipitate with ammonia water soluble in excess *of the precipitant*. Tannic acid solution gives a yellow precipitate. Stannous chloride produces a grey-black precipitate. Hydrogen sulphide and ammonium sulphide produce a black precipitate. When potassium iodide is added to a solu*tion of* mercuric oxycyanide until it becomes yellow the addition of ammonia produces a red color which finally becomes a brown precipitate, which dissolves to a colorless solution in potassium iodide. An aqueous solution should not give a test *for* chloride nor should 0.2 Gm. leave a weighable residue when ignited. (Pharm. Helvetica, edit. 4.)

1 Gm. of mercuric oxycyanide digested with 1 Gm. sodium chloride in 20 Cc. water yields a solution which should require not less than 37 Cc. of tenth normal hydrochloric acid for neutralization, methyl orange or paranitrophenol indicator being used.

Action and Uses.—Mercuric oxycyanide is recommended as a substitute for mercuric chloride. Its antiseptic power is said to be greater and it is claimed to be less irritating than mercuric chloride, because it does not act on albumin to the same extent. It has the advantage over the chloride that it does not corrode steel instruments.

Dosage.—It may be given by hypodermic injections in the same doses as mercuric chloride or may be applied locally in solution, 1-5,000 or slightly stronger.

MERCURIC SALICYLATE—Hydrargyri Salicylas.—Hydrargyrum salicylicum (Pharm. Germanica, edit. 4; Pharm. Helvetica, edit. 4).

Mercuric salicylate, $Hg.C_6H_4.O.COO$. is a mercuric salt of salicylic acid in which one atom of mercury has combined with one molecule of salicylic acid by replacing the hydrogen atoms of the phenolic hydroxyl and carboxyl groups.

Mercuric salicylate may be prepared by precipitating the mercuric oxide from 27 parts of mercuric chloride as directed in the case of Hydrargyri Oxidum Flavum, washing, placing in a flask with a little water and 15 parts of *salicylic acid*, and heating on a water-bath with agitation until the mixture is perfectly white. Collect the precipitate, wash until free from acid, dry at 30° to 40° C. (86°-104° F.), and finally at 100° C. (212° F.).

Mercuric salicylate occurs as a white amorphous powder, tasteless, odorless and neutral to litmus paper, slightly soluble in water or alcohol, but soluble at the ordinary temperature in solutions of sodium hydroxide and sodium carbonate with *formation of a double salt*. From these solutions it is reprecipitated by acids. It is soluble also in warm solutions of chlorides, bromides and iodides. On ignition it is entirely volatilized. Strong mineral acids decompose it, especially on heating, and after this decomposition hydrogen sulphide precipitates black mercuric sulphide from the solution.

When shaken with water the resulting solution gives a violet coloration with ferric chloride.

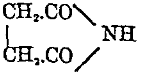
An aqueous solution of mercuric salicylate is not precipitated or colored immediately by hydrogen sulphide or ammonium sulphide.

0.1 Gm. of mercuric salicylate heated in a small tube with a small crystal of iodine produces the characteristic orange to red colored mercuric iodide (Pharm. Germanica, edit. 4). 0.3 Gm. mercuric salicylate mixed with about 3 Gm. sodium chloride and dissolved in 100 Cc. boiling water should upon diluting to 400 Cc., acidifying with hydrochloric acid and passing hydrogen sulphide, yield 0.2 Gm. mercuric sulphide.

Action and Uses.—Antiseptic and antisyphilitic. It has been stated that it is well tolerated by the stomach and that it does not produce salivation, but it may produce some gastrointestinal irritation occasionally, even when used hypodermically. The lack of salivation is probably due to its insolubility and slow absorption and not to any peculiarity of its effects. It is used as a disinfectant and as a remedy in syphilis and in certain skin diseases.

Dosage.—0.003 to 0.008 Gm. (1/20-1/8 grain). For hypodermic injections a suspension in liquid paraffin, one part in 10, is used; before injecting the mixture must be well shaken in order that the insoluble salt may not remain at the bottom. The needle and syringe should be thoroughly cleansed after each injection, as the insoluble drug readily clogs the instrument. At first, 0.65 Cc. (10 minims) of the mixture described should be injected deeply into the gluteal region every fourth day and this may be increased to every second day if no symptomatic evidences of the action of the drug appear. It is used in the form of dusting powder and ointment (1 in 10). A suspension in a mucilaginous vehicle (1 in 300) is used as an injection in gonorrhea, 1 Cc. (15 minims) being injected at a time. As a disinfectant the salicylate is as powerful as mercuric chloride, its great drawback being its insolubility; in order to overcome this difficulty the following formula has been devised: Mercuric chloride, 1 part; sodium salicylate, 3 parts; dissolved in distilled water, 100 parts.

MERCURIC SUCCINIMIDE—**Hydrargyri Succinimidum.**—Mercury succinimide $(Hg(CH_2.CO)_2N)_2 = HgC_8H_8O_4N_2$, is the mercuric salt of succinic acid-imide,



Mercury Succinimide may be prepared by dissolving freshly precipitated mercuric oxide in warm aqueous solution of succinimide and evaporating the mixture, which then deposits crystalline needles. (Schmidt's Pharm. Chemie, vol. II, pt. I, p. 482.) It may also be prepared by adding an alcoholic solution of succinimide containing a few drops of ammonia to an ethereal solution of mercuric chloride (Proceedings A. Ph. A., vol. 40, p. 1029).

Mercury succinimide is a white crystalline powder, soluble in 25 parts hot water and in 75 parts of cold water, and in 300 parts of alcohol. It is very stable in solution. The aqueous solution is not affected by albumin. Mercury succinimide should be protected *from light.* Toward hydrogen sulphide and potassium iodide it reacts as an inorganic mercuric compound. Addition of sodium hydroxide to an aqueous solution of mercuric succinimide produces a yellowish-white precipitate, which on heating is reduced to metallic mercury. If mercuric succinimide is heated with five times its bulk of zinc dust, pyrrol is given off, which may be recognized by the red color which is developed when a pine shaving moistened with hydrochloric acid is held in its vapors.

The aqueous solution must be neutral and should not be affected by solutions of silver nitrate or egg albumin (absence of mercuric chloride and other mercuric salts).

On ignition it should volatilize completely, leaving no residue. If one gram is shaken with 10 Cc. of dry ether, the liquid filtered and the ether removed by evaporation, no residue should remain. If one gram is suspended in ether and hydrogen sulphide passed through the mixture *for some* time, the mercury succinimide will be decomposed, the mercury being precipitated as mercuric sulphide. If the ether be filtered from this precipitate, and evaporated, a residue of succinimide will remain which should have a melting point of 124-125° C.

Actions and Uses.—Mercuric succinimide has the action of other salts of mercury, but its solutions are said to be nonirritating. This preparation is used like other compounds of mercury in the treatment of syphilis.

Dosage.—Mercuric succinimide is used mainly by hypodermic injection, a 2.5 per cent. solution being employed. From ½ to 1 Cc. (8 to 16 minims) of this solution may be injected once daily. Mercuric succinimide may be given by the mouth in doses of 0.01 to 0.015 gm. (1/6 to 1/4 grain).

Non-Proprietary Preparations:

Tabloid Mercury Succinimide (Hypodermic) 1/5 grain: Each tablet contains mercuric succinimide 0.013 Gm. (1/5 grain). Prepared by Burroughs-Wellcome & Co., London and New York.

Hypodermic Tablets Mercuric Succinimide, 1/5 grain: Each tablet contains mercuric succinimide 0.013 Gm. (1/5 grain). Prepared by Sharpe & Dohme, Baltimore Md.

Hypodermic Tablets Mercuric Succinimide, 1/10 grain: Each tablet contains mercuric succinimide 0.006 Gm. (1/10 grain). Prepared by Sharpe & Dohme, Baltimore Md.

MERCUROL—**Hydrargyri Nucleinas.**—**Mercury Nucleinate.**—Mercurol is an organic compound of mercury with nucleinic acid from yeast, containing 10 per cent. of metallic mercury.

It is prepared by adding a solution of mercuric chloride to an alkaline solution of nuc [illegible] xcess of alkali, precipitating the resulting [illegible] by the addition of alcohol and a concentr [illegible] utral salt (sodium chloride), separating the [illegible] and drying it.

It is a brownish-white powder, soluble in water, especially in warm water, insoluble in alcohol. Its watery solution has a distinct metallic taste, a weak alkaline reaction, and is not precipitated by alkalies, nor by albuminous liquids.

The mercury in this preparation resists the action of hydrogen sulphide to a marked degree.

Actions and Uses.—Mercurol does not coagulate albumin; it has marked bactericidal power and possesses the pharmacologic action of soluble mercury compounds.

It is recommended as a local antiseptic application and as an antisyphilitic remedy.

Dosage.—0.3 to 0.12 Gm. (½ to 2 grains).

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patent No. 637,355 (Nov. 21, 1899; expires 1916).

MERGAL.—Mergal is a mixture of 1 part of mercuric cholate and 2 parts of albumin tannate put up in capsules. Each capsule said to contain approximately 0.15 Gm. (2¼ grains) of mergal equivalent to 0.05 Gm. (¾ grain) mercuric cholate and 0.1 Gm. (1½ grains) albumin tannate. Mergal contains approximately 4.4 per cent. mercury.

Mercuric cholate is prepared by a patented process, mixed with albumin tannate, and inserted into gelatin capsules in the usual way.

Mergal is a yellowish white, loose, somewhat light powder, insoluble in water and alcohol and almost insoluble in solution of sodium chloride.

When 0.1 Gm. of mergal is shaken with a few drops of saturated solution of cane sugar and underlaid with concentrated sulphuric acid, a purplish red to reddish violet zone is produced.

If 0.2 Gm. of mergal is warmed on the water bath with 10 Cc. of hydrochloric acid for about fifteen minutes and the evaporated water replaced after cooling and filtering, there *results a colorless* or slightly yellowish solution which gives a black precipitate with solution of hydrogen sulphide. The same filtrate gives with a drop of stannous chloride solution an immediate precipitation of metallic mercury.

Mergal should leave no weighable residue on incineration.

0.2 Gm. of mergal boiled for one minute with 20 Cc. of water gives a clear filtrate which is colored dark violet on the addition of a drop of solution of ferric chloride.

0.1 Gm. of mergal when heated with a mixture of 5 Cc. of concentrated sulphuric acid and 5 Cc. of water to boiling, produces a turbid reddish solution. The filtrate after *dilution* with 3 to 4 parts of water and the addition of a drop of solution of copper sulphate gives on careful underlaying or on mixture with an excess of sodium hydroxide solution an evanescent violet-red color. Mergal should be protected from the light.

Actions and Uses.—Mergal is said to pass through the stomach without decomposition and to be decomposed into its constituents in the small intestine, where the mercury is quickly absorbed into the blood and excreted through the kidneys. It is said to be useful in all forms of syphilis and in the para-syphilitic affections, such as tabes and general paralysis. It is also said to be useful for the intermittent *treatment* according to the method of Fournier and Neisser.

Dosage.—One capsule three times a day after meals, gradually increasing to two capsules five or six times a day.

Manufactured by J. D. Riedel Aktiengesellschaft, Berlin, Germany (Riedel & Co., New York). U. S. patent No. 811,193 (Jan. 30, 1906; expires 1923). U. S. trade-mark No. 53,919.

MESOTAN—**Ericin.**—Mesotan is methyl-oxymethyl salicylate, $C_6H_4.OH.COO(CH_2.O.CH_2) = C_9H_{10}O_4$, an ester of salicylic acid, analogous to methyl salicylate.

It is prepared by the action of chlormethyl ether on salicylates thus: $C_6H_4.OH.COONa + CH_2Cl.O.CH_3 = NaCl + C_6H_4.OH.COO(CH_2.O.CH_3)$.

It is a clear, yellowish, faintly aromatic, oily fluid, sp. gr. 1.2 at 15° C. (60° F.) and boiling at about 162° C. (323.6° F.). It is difficultly soluble in water, but readily soluble in the usual organic solvents and miscible with oils in all proportions. Above 100° C. (212° F.) it is decomposed, yielding salicylic acid, formaldehyde and methyl alcohol and it is likewise decomposed to a certain extent by moisture in the air.

Its watery solution gives a violet color with ferric chloride and after heating or exposure to moisture it responds to the usual tests for formaldehyde. Concentrated sulphuric acid colors it red.

It should be kept in a cool place and preserved dry in well-stoppered bottles.

Actions and Uses.—The action of mesotan is similar to that of oil of wintergreen, but it is more irritating to the skin. It is said to be useful in all forms of rheumatism.

Dosage.—Being quite irritating when applied pure to the sensitive skin, it is employed diluted with an equal volume of olive oil, and without friction. Simple application to the affected part, which need not be covered, or, if so, only *slightly, is said to give prompt relief.*

Manufactured [illegible] vorm. Friedr. Bayer & Co., Elberfield, German[illegible] of Elberfield Co., New York). U. S. patent No. 7[illegible]; expires 1919).

METHYL CHLORIDE—Methyl *Chloridum.*—*Methyl* chloride, CH_3Cl, is the hydrochloric acid ester of methyl alcohol. It occurs, in the compressed state, as a colorless liquid, having an ethereal odor, and a sweet taste.

Methyl chloride is insoluble in water, more readily in alcohol, freely in ether and chloroform, and also in acetic acid. *It should* be neutral to litmus paper. At about —25° C. (—13° F.) it has a specific gravity of 0.991, and boils at about —21° C. (—5.8° F.). It burns in *air* with a greenish flame, though it is not highly inflammable. The neutral solution is not precipitated by solution of silver nitrate, nor is there any reaction with potassium iodide and starch paste. In the liquid condition it is a powerful refrigerating agent. At very low temperatures it forms with water a *hydrate,* $CH_3Cl.9H_2O$. *It should not react alkaline* to litmus (absence of ammonia and methylated ammonia—methylamine). It should not immediately form a precipitate with silver nitrate. On evaporating it should leave no residue and emit no odor of methylamine.

Action and Uses.—By its evaporation a temperature of *—23°* (—*9.4°* F.) is produced, while if evaporation be accelerated by means of a current of air a temperature of —55° (—67° F.) may easily be reached. On account of this property it is used as a local anesthetic in the form of a spray, but its use requires caution, since it is apt to produce blisters. The diluted vapor is said to be non-poisonous. Methyl chloride is said to be an efficient general anesthetic, which has practically no influence on the circulation, but fails to produce complete muscular relaxation. It is used as a general anesthetic mixed with ethyl chloride and ethyl bromide.

Dosage.—When sprayed on the skin the part should be partly protected by a thin layer of cotton wool. When used locally cotton wool soaked in liquid methyl chloride may be applied to the skin over the painful area, but care should be taken that blisters are not formed. In order to avoid this a mixture with ethyl chloride has been recommended.

MORPHINE DERIVATIVES

By the substitution of various radicles for hydrogen in morphine, substances are produced, the action of which varies somewhat from that of morphine and which possess, it is claimed, certain advantages over the parent alkaloid. Codeine is a natural substitution product of the same type. The principal derivatives of this class are methyl-morphine (codeine,) ethyl-morphine and diacetyl-morphine.

DIACETYL-MORPHINE—Morphina Acetylata.—Diacetyl-morphine, $C_{17}H_{17}(C_2H_3O_2)_2NO = C_{21}H_{23}O_5N$, is a synthetic alkaloid obtained by the acetylization of morphine.

Diacetyl-morphine was first introduced under the name Heroin by the Farbenfabriken, vorm. Friedr. Bayer & Co. It may be obtained by *heating* morphine with acetylchloride, washing the product with water and dilute solution of sodium carbonate and crystallizing it from alcohol.

It is a white, *odorless* powder, *having a bitter taste, an* alkaline reaction and *melting at* 173° C. (343.4° F.). It is soluble in about 1,60[illegible] parts of water, 25 parts of alcohol, 2 parts of chloroform, 70 parts of ether and 6 parts of benzin; also soluble *in 3* parts of boiling alcohol. It forms salts with acids which are *soluble* in water. On prolonged warming with *mineral acids* it is saponified, splitting *off acetic* acid and reforming morphine.

A solution of 1 part diacetyl-morphine in 100,000 parts of water becomes distinctly turbid on addition of solution of iodine. Its color reactions are similar to those *of* morphine, with *the* following exceptions. It does not liberate *iodine from* iodic acid and does not at *once produce a blue coloration* with potassium ferricyanide and ferric chloride. No blue color is produced by the addition *of* ferric chloride to a neutral solution (1 in 100) made by the careful addition of *dilute sulphuric* acid. Its solutions reduce potassium permanganate.

Actions and Uses.—When given in small doses Diacetyl-morphine and *its* hydrochloride have *apparently no effect on any of the* vital functions except respiration, which it renders *slower, the* volume of the individual *respirations being* increased, but usually not sufficient to compensate the slowing, the result being *a diminution in the total* amount of air respired. In large doses it *may* produce dizziness, nausea and *occasionally constipation,* and, in poisonous amounts, twitching of the extremities, great exhaustion, and dimness of vision may be added. The temperature becomes subnormal and the pulse rapid and thready. The habit is readily formed and leads to the most deplorable results. It is said *not to produce costiveness. (This is not true, according to some observers.)* It is readily absorbed from mucous membranes. It lessens *irritability of the respiratory* center, thus allaying cough, but does *not* depress *the respiration* as much as morphine.

On withdrawing the drug from habitués there is said to be a tendency *to* respiratory failure which may be dangerous.

Diacetyl-morphine and its hydrochloride have been recommended chiefly for the treatment of diseases *of* the *air* passages attended with cough, difficult breathing and spasm, such as the different forms of bronchitis, pneumonia, consumption, asthma, whooping cough, laryngitis, and certain forms of hay *fever. It has also* been recommended as an analgesic, in the place of morphine in various painful affections.

Toxic symptoms should be treated by the administration of caffein hypodermically and of hot coffee by the stomach. To *avoid respiratory failure in the treatment of* diacetyl-morphine addiction, it has been suggested to substitute morphine for *the* diacetyl-morphine *and then treat the patient* for morphine addiction.

Dosage.—See Diacetyl-morphine Hydrochloride.

Proprietary Preparation:

HEROIN.—A name applied to Diacetyl-morphine, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. trademark.

DIACETYL - MORPHINE HYDROCHLORIDE — Morphinæ Acetylatæ Hydrochloridum.—Diacetyl-morphine hydrochloride, $C_{17}H_{17}(C_2H_3O_2)_2NO.HCl$, is the diacetyl-morphine salt of hydrochloric acid.

It is prepared by dissolving diacetyl-morphine in dilute hydrochloric acid, *concentrating* the neutral solution by *evaporation* and *crystallizing.*

It is a white, crystalline, odorless powder, having a bitter taste, showing a neutral reaction with congo and melting at 230° to *231° C. (446° to 447.8° F.).*

It is soluble in 2 parts of water and soluble also in alcohol, but insoluble in ether.

Its aqueous solutions are precipitated by alkaline hydroxides, *the precipitate being* soluble in excess *of* the *reagent,* and by alkaline carbonates. In other respects the reactions are the same as those given under diacetyl-morphine (which see).

It is incompatable with alkalies and their carbonates, tannic acid and other precipitants *of* alkaloids. It is decomposed by mineral acids, particularly when heated.

Actions and Uses.—See Diacetyl-morphine.

Dosage.—0.0025 to 0.005 Gm. (1/24 to 1/12 grain) to adults three to four times a day, the maximum dose being 0.01 Gm. (1/6 grain). To children it may be given in doses varying from 0.0002 to 0.001 Gm. (1/300 to 1/60 grain), according to the age. Hypodermically *it may be administered in the form of* a 2 per cent. solution in the same doses. It has been applied locally to the throat, to the uterus on tampons, and by suppository for painful pelvic affections generally, but there is no evidence that it produces any local anesthetic action.

Proprietary preparation:

HEROIN HYDROCHLORIDE.—A name applied to Diacetyl-morphine Hydrochloride, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. trademark.

ETHYL - MORPHINE HYDROCHLORIDE — Morphinæ Æthylatæ Hydrochloridum. — Ethyl-morphine hydrochloride, $C_{17}H_{17}NO(OH)\ (OC_2H_5)\ HCl + H_2O = (C_{19}H_{24}O_3ClN + H_2O$, *is the* hydrochloride *of the* ethyl ester *of morphine.*

The product was first introduced by Merck & Co., under the trade name Dionin. It may be *obtained by the action* of ethyl iodide on morphine in the presence of alkali, the basic product being *purified* by crystallization from hot *alcohol,* dissolving the crystals in hydrochloric acid and crystallizing.

It is a white, microscopically *crystalline powder, odorless* and only slightly *bitter. It is soluble* in about 7 parts of water and in 2 *parts* of alcohol, insoluble in ether and in chloroform. It melts completely with decomposition at *125° C. (257° F.).*

It gives the usual reactions for *alkaloids. It is* distinguished *from* morphine salts by its *insolubility* in excess of alkali, and by not producing an immediate blue color, but gradually developing a blue-green coloration, when its solution is added to dilute ferric chloride solution containing a fragment of potassium ferricyanide.

It is incompatible with alkalies and their carbonates and alkaloidal reagents, as potassio-mercuric iodide, tannic acid, picric acid, etc.

Actions and Uses.—It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is the conclusion of some good observers that it possesses no advantage over codeine. Applied to the eye, it causes a local vaso-dilation, leading to acute conjunctival edema.

Ethyl-morphine Hydrochloride is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping-cough, for insomnia and externally in the treatment of corneal affections, conjunctivitis, iritis, etc.

Dosage.—0.015 to 0.06 Gm. (¼ to 1 grain). Externally it is applied in 10 to 20 per cent. solutions.

Proprietary Preparation:

DIONIN.—A name applied to Ethyl-morphine-Hydrochloride, which see.

Manufactured by E. Merck, Darmstadt, Germany. (Merck & Co., New York). German patents Nos. 102,654, 107,225 and 108,075. U. S. trade-mark.

MORPHINE MECONATE.—Morphinæ Meconas.—Morphine meconate, $(C_{17}H_{19}O_3N)_2.C_7H_4O_7.5H_2O$, is the normal salt of morphine, $C_{17}H_{19}O_3N$, and meconic acid, $H_2(C_7H_2O_7)$, a dibasic acid obtained from opium.

Morphine meconate may be prepared by dissolving 10 Gm. crystallized meconic acid in 60 Cc. warm water, adding gradually 24 Gm., or sufficient crystallized morphine alkaloid to produce a neutral solution and evaporating to dryness at a temperature below 80° C. (176° F.). (Hager, 1903, vol. 2, p. 403.)

Morphine meconate occurs in minute colorless crystals or a yellowish white powder, soluble in 34 parts of water, also soluble in alcohol. It contains 66.3 per cent. anhydrous morphine.

Action, Uses and Dosage.—The same as other salts of morphine.

Non-Proprietary Preparation:

Tabloid Morphine Meconate (Hypodermic) 1/8 grain.—Each tablet contains morphine meconate 0.008 Gm. (1/8 grain). Prepared by Burroughs-Wellcome & Co., London, England, and New York.

NEUROCAINE.—Billets of Cocaine, Schieffelin.—

Each billet contains cocaine hydrochloride 0.005 Gm. (1/12 grain), without excipient. The billets are ⅛ inch long, 1/20 inch in diameter and very soluble.

Neurocaine is used for pressure anesthesia or as a local anesthetic in dental practice.

Prepared by Schieffelin & Co., New York. U. S. trademark, No. 43,837.

NOVARGAN — Argenti Proteinas. — Silver Proteinate. — Novargan is an organic silver-albumin compound containing 10 per cent. of silver.

It is a fine yellow powder, soluble in water, forming a practically neutral solution, from which it is not precipitated by sodium chloride, nor affected by the usual reagents for silver salts. Solutions must not be heated and must be protected from the light.

The solution is darkened by hydrogen sulphide or ammonium sulphide, but no precipitate is produced.

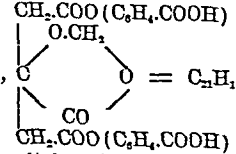
Actions and Uses.—Novargan is a bactericide; it is claimed to be more effective and less irritating than other protein-silver compounds.

It is said to be useful for the treatment of gonorrhea, especially as an abortive in the first stage.

Dosage.—0.5 Cc. (8 minims) of a 15 per cent. solution, by instillation on the anterior portion of the urethra, through a catheter 23 Cm. (9 in.) long, No. 13 French scale, as an abortive.

Manufactured by the Heyden Chemical Works, Radebeul, Germany, and Garfield, N. J. U. S. trademark No. 19,989.

NOVASPIRIN—Methylene-Citrylsalicylic Acid.—Novaspirin is methylene-citrylsalicylic acid,



= $C_{21}H_{16}O_{11}$, a compound of anhydro-methylene-citric acid (see Citarin) and salicylic acid.

Novaspirin is prepared by the action of methylene citric acid dichloride on salicylic acid.

Novaspirin is a white, odorless, crystalline powder, having a faint acidulous taste. It is easily soluble in alcohol, difficultly soluble in chloroform, ether, and scarcely soluble in water. It contains 62 per cent. of salicylic acid.

On heating with caustic alkalies salicylic acid is generated. On prolonged standing with water and more easily with alkalies it is split up into its components. When heated in a test tube it melts with the generation of formaldehyde. On adding dilute acid to the warm alkaline solution, white crystals of salicylic acid are separated.

Actions and Uses.—Novaspirin is not decomposed in the stomach and is said to be non-irritating to that organ, but it is broken up in the intestine into salicylic acid and methylene-citric acid. From its chemical constitution it is reasonable to expect it to have the same systemic actions and uses as salicylic acid.

It is said to be useful in influenza, coryza, tonsillitis, rheumatic conditions, gout and neuralgic conditions.

Dosage.—1 Gm. (15 grains) several times daily.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 858,142 (June 25, 1907; expires 1924). U. S. trademark No. 62,613.

Novaspirin Tablets, 5 grains. Each tablet contains novaspirin 0.33 Gm. (5 grains).

NOVOCAINE.—Novocaine is 1-para-aminobenzoyl-2-diethylaminoethane hydrochloride. $CH_2(C_6H_4.NH_2.COO).CH_2[N(C_2H_5)_2].HCl$, the monhydrochloride of para-aminobenzoyldiethylaminoethanol.

Novocaine crystallizes from alcohol in fine, colorless needles, which melt at 156° C. (312.8° F.). It is soluble in an equal weight of water, but requires 30 parts of alcohol. From the aqueous solution, which is neutral, alkali hydroxides and carbonates precipitate the free base in the form of *a colorless oil*, which soon congeals to a crystalline mass, but solution of sodium bicarbonate is miscible with solutions of novocaine without producing either precipitation or turbidity. The free base crystallizes from diluted alcohol with 2 molecules of water, but from ether or ligroin in the form of anhydrous shining prisms, which melt at 58° to 60° C. (136.4° to 140° F.), while the hydrated base melts at 51° C. (123.8° F.).

The aqueous solution of the salt may be heated to boiling without decomposition, and remains perfectly clear when kept for days in loosely stoppered vials. It gives precipitates even in very dilute solutions with the usual alkaloidal reagents, such as potassium mercuric-iodide, picric acid, potassium iodide, etc.

It is incompatible with alkalies and their carbonates and the alkaloidal reagents.

Actions and Uses.—It is a local anesthetic similar to cocaine, but said to be far less toxic than any of the cocaine substitutes. When injected subcutaneously it is said to exert a prompt and powerful anesthetic action, but the effect is not sustained. This may be remedied by the simultaneous injection of suprarenal alkaloid. Novocaine is not irritant. (See note under Creosote Carbonate.)

It is said to be useful in all cases in which cocaine is indicated.

Dosage.—For infiltration anesthesia, solutions of 0.25 Gm. (4 grains) novocaine in 100 or 50 Gm. (3.2 or 1.6 ounces) physiologic salt solution, with 5 or 10 drops of epinephrine solution (1-1000); for instillations and injections, solutions of 0.1 Gm. (1½ grains) novocaine in 10 or 5 Gm. (150 or 75 grains) salt solution, with or without 10 drops of epinephrine solution (1-1000). In ophthalmology, 1 to 5 to 10 per cent. solution, in rhino-laryngology 5 to 20 per cent. solutions are recommended, with the addition of 6 to 8 drops of epinephrine solution (1-1000) to each 10 Cc. (160 minims). Internally, owing to its feeble toxicity, it may be given in doses up to 0.5 Gm. (7½ grains) to adults.

Manufactured by Farbwerke, vorm. Meister, Lucius & Breuning, Hoechst a. M., Germany (Victor Koechl & Co., New York).

Hypodermic Tablets Novocaine, 1/3 grain. Each tablet contains novocaine 0.020 Gm. (⅓ grain).

NOVOCAINE NITRATE—Novocainæ Nitras.—Novocaine nitrate is, 1-para-aminobenzoyl-2-diethylamino-ethane nitrate, $C_6H_4.NH_2(COO.C_2H_4.N(C_2H_5)_2.HNO=C_{13}H_{21}O_5N_3$, the nitrate of p-aminobenzoyldiethylaminoethanol, the base contained in novocaine.

Novocaine nitrate occurs in small colorless and odorless crystals, soluble in water and alcohol. The aqueous solution is neutral in reaction. Melting point 100°-102° C. (212°-215° F.).

If 0.1 Gm. novocaine nitrate be dissolved in 1 Cc. concentrated sulphuric acid and a solution of ferrous sulphate carefully floated above it, a brown zone is formed at the surface of contact of the two solutions. 1 part novocaine nitrate dissolved in 10 parts water and acidified with nitric acid, should yield no precipitate upon the addition of silver nitrate solution.

Actions and Uses.—As for novocaine; may be prescribed in combination with silver salts, with which it forms no precipitate.

Dosage.—Used in 3 per cent. solutions.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

U. S. patent No. 812,554 (*Feb. 13, 1906; expires 1923*). *Trademark* No. 53,072.

NUCLEIN, NUCLEIC ACID AND NUCLEATES

Nucleins are modified nucleoproteins obtained by peptic digestion or by treatment with dilute acids. They are split up by the action of alkalies or by tryptic digestion into a protein constituent and a nucleic acid. The exact composition of the protein and of the nucleic acid varies somewhat with the source of the nucleoprotein from which it is derived. The nucleic acids of commerce are apt to contain some protein in combination. They are most commonly made from yeast cells, but have been made, also, from the wheat embryo, the sperm of certain fishes and from the thymus and pancreas glands. In composition they approximate the formula: $C_{40}H_{52}N_{14}O_{25}P_4$. From the wheat embryo products with relatively more nitrogen have been obtained.

Nucleins are colorless, amorphous, insoluble in alcohol and ether and insoluble or slightly soluble in water. They are more or less readily dissolved by dilute alkalies. They give the biuret test and Millon's reaction. They show a great affinity for many dyes, taking them up from aqueous or alcoholic solutions. The term nuclein is sometimes used to designate an impure nucleic acid, which usage has led to confusion as the nucleic acids are bodies of definite composition.

Both nucleins and nucleic acids yield metaphosphoric acid on incineration. On fusion with potassium nitrate and sodium carbonate they yield alkali phosphates.

Actions and Uses.—Nuclein and nucleic acid and nucleates are said to increase the number of white corpuscles, and it has been claimed that this increases the resistance to infections. These results have been obtained by intravenous or hypodermic injection, and on this basis therapeutic deductions have been made; it is doubtful whether we are warranted in applying these conclusions to the administration of the remedy by the mouth.

Nuclein and nucleic acid and nucleates have been used in tuberculosis and various infections, but their true value is undetermined.

They are transformed in the organism into purin compounds and may cause the amount of uric acid in the urine to be increased.

NUCLEIN—Nucleinum.—Nuclein is a modified nucleoprotein obtained by peptic digestion or by treatment with dilute acids.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—0.5 to 1 Gm. (8 to 15 grains) three times a day.

NUCLEIC ACID.—Acidium Nucleicum.—Nucleinic Acid.—Nucleic acid is an organic acid obtained from nuclein by the action of alkalies or by tryptic digestion.

Nucleic acid is an amorphous, white powder and has an acid reaction. It is readily soluble in ammoniacal or alkaline water with the formation of water-soluble salts. From these solutions it is precipitated by slight excess of hydrochloric acid but not by acetic acid. It is insoluble in alcohol and ether. When chemically pure it does not give the biuret test or Millon's reaction, but a slight response to these reagents does not indicate a degree of impurity incompatible with its use as a medicinal agent.

It should contain between 14.5 and 16.5 per cent. of nitrogen and between 8.5 and 10.5 per cent. of phosphorus, the relative proportion being 4 atoms of P to 14 or 16 N, approximately.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—0.06 to 0.3 Gm. (1 to 5 grains) three times a day.

Non-Proprietary Preparation:

Nucleinic Acid Merck (from Yeast).—Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

SODIUM NUCLEATE.—Sodii Nucleas.—Sodium Nucleinate. Sodium Nucleate is the sodium salt of nucleic acid.

Actions and Uses.—See Nucleir, Nucleic Acid and Nucleates.

Dosage.—Practically the same as that of Nucleic Acid.

Proprietary Preparations:

NUCLEIN, Abbott.—Sodium Tritico-Nucleinate, Abbott. A sodium nucleate derived from the wheat germ.

It is a grayish-white powder, soluble in water and insoluble in alcohol. On incineration it yields approximately 26 per cent. of ash, which is slightly alkaline and readily soluble in water. It contains phosphorus and nitrogen in the ratio of 1 atom of P. to 3.66 N. When the aqueous solution is decomposed by weak hydrochloric acid, a voluminous precipitate of the free nucleic acid is formed.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—See Nucleic Acid.

Manufactured by the Abbott Alkaloidal Co., Chicago. Not *patented or trademarked.*

Nuclein Solution, Abbott.—Liquor Sodii Tritico-Nucleinatis Abbott.—A solution of Nuclein-Abbott containing approximately 10 Gm. of the salt in 100 Cc. (6 grains in one fluidram) of a menstruum containing 15 per cent. of alcohol. The solution is standardized to contain 1 mg. phosphorus in 1 Cc.

The aqueous extract of the wheat germ is treated with sodium chloride and acid, the precipitate digested with pepsin, neutralized with sodium hydroxide and purified by precipitation with alcohol. The resulting *sodium tritico-nucleinate* is dissolved in distilled water and 15 per cent. of alcohol as a preservative.

Nuclein Tablets, Abbott.—Each tablet is said to contain 0.13 Cc. (2 minims) of Nuclein Solution. Abbott.

OIL OF PINE NEEDLES—Oleum Pini.—Oil of Pine (British Pharm., edit. 8), Oleum Pini Pumilionis (Pharm. Austriaca, edit. 8). Oil of pine needles is the oil distilled from the fresh leaves of Pinus Pumilio, Haenke (British Pharm., edit. 8).

Oil of pine occurs as a colorless or faintly yellowish liquid, having a pleasant, aromatic odor, and a pungent taste. The oil is soluble in 4.8 volumes 90 per cent. alcohol (Hager, 1908). Specific Gravity, 0.865 to 0.875; begins to boil at 165° C. (329° F.). (British Codex, 1907.)

It should rotate the plane of a ray of polarized light from 5° to 10° to the left at 15.5° C. (60° F.) in a tube 100 millimeters long. Not more than 10 per cent. should distil below 165° C. (329° F.).

Action and Uses.—Oil of pine is employed principally as an inhalant with hot water for its stimulating and disinfecting action in catarrh of the respiratory passages, chronic laryngitis and bronchitis. It has been applied locally and given internally in the treatment of chronic rheumatic affections. When added to ether it is said to allay the irritation and diminish the bronchial secretion, which frequently become excessive, during or after the production of anesthesia by the latter drug.

Dosage.—0.05 to 0.3 Cc. (1 to 5 minims). The oil is given internally as a respiratory antiseptic and "expectorant," being taken on sugar, in capsules, or in the form of pastilles. It is rubbed over rheumatic joints, which are then covered with cotton wool, or 4 Cc. (1 fluidram) of the oil may be added to a warm bath.

Vapor Olei Pini.—Oil of pine, 10 Cc.; Magnesium Carbonate, 5 Gm.; Distilled water, sufficient to produce 100 Cc.

Mix the oil with the magnesium carbonate and add the water. A quantity sufficient for one inhalation, 4 Cc. (1 fluidram), is to be placed with 300 Cc. (10 fluidounces) of cold water and 300 Cc. (10 fluidounces) of boiling water in an apparatus so arranged that the air to be inhaled may pass through the solution.

Pine oil inhalation is used as a mild antiseptic in catarrhal affections of the respiratory passages.

OLEORESIN OF PARSLEY SEED—Oleoresina Apii.—Apiol, Green.—An oleoresin obtained from parsley seed by extraction with alcohol.

Parsley seed is extracted with alcohol, the alcohol recovered, and the liquid portion of the residue freed from the solid, waxy matter which separates on standing.

Oleoresin of parsley seed is a greenish, oily liquid, insoluble in water, but soluble in alcohol, ether, and chloroform. Sp. gr. about 1.05.

Actions and Uses.—See Apiol.

Dosage.—0.3 to 1 Cc. (5 to 15 minims) in capsules.

ORGANIC IRON PREPARATIONS

The term, "organic iron" ("masked" or "non-ionic" iron) is confined by modern usage to those organic compounds of iron which do not give the chemical tests of this metal (blue color with potassium ferrocyanide, blue-black color with hematoxylin, etc.) until the structure of the molecule has been destroyed by reagents. The resistance to this destruction varies greatly; some (such as hemoglobin) require incineration or the action of concentrated acids; while others give the iron-tests after treatment with even fairly dilute acids. The organic iron compounds occurring naturally in animal and vegetable tissues (which are often termed "food-irons") belong generally to the more resistant class, while the iron of the synthetic preparations is usually liberated fairly readily. This does not, however, constitute a sharp line of distinction between the two classes, nor is there any good evidence that they differ in therapeutic action. Until this difference is established all organic iron preparations, whatever their source, may be placed in a single class. It is evident, however, that an organic iron (chemically) which is destroyed by 0.2 per cent. hydrochloric acid at the body temperature, cannot be classed as an organic iron in the therapeutic sense. It should also be emphasized that salts of iron (which give the iron tests directly) are classed as inorganic iron, whatever the acid radicle. True albuminates, peptonates, etc., of iron are, therefore, inorganic.

Actions and Uses.—Organic iron preparations are used to increase the hemoglobin in conditions of anemia. Bunge supposed that only organic iron could be absorbed and assimilated by the body, the reputed action of inorganic iron being altogether indirect, and due to its local effects on the alimentary canal. This theory was modified by Abderhalden, to the effect that inorganic iron, while it could not be converted into hemoglobin, nevertheless stimulated the assimilation and conversion of organic iron. The later work, however (Tartakowski) seems to prove conclusively that inorganic iron is assimilated and converted into hemoglobin, and is in so far therapeutically, fully equal to organic iron. Many authors, nevertheless, still adhere to the theories of Bunge and Abderhalden At all events, a real difference exists between the organic and most of the inorganic preparations, namely, in the local irritant and astringent action of the latter, and the absence of these effects in most of the organic compounds. These actions may be desirable in some cases, and undesirable in others. It should also be remembered that organic iron may often be administered in sufficient amount, and most economically, by selecting a dietary rich in iron, such as red meats, egg-yolks, green vegetables, whole wheat, etc.

ORGANS OF ANIMALS

The discovery of the importance of internal secretions has led to extensive clinical trials with preparations of the so-called ductless glands, and other tissues which elaborate, or are supposed to elaborate such internal secretions. Two of these, the thyroid and suprarenal glands, have given decisive therapeutic results and have become official in the Pharmacopeia; preparations of the active principle of the suprarenal are described in this book under the heading of "Epinephrin." The other organ products are scarcely beyond the experimental stage, and may therefore be described together. Their active principles have not been isolated, and they are most commonly used in the form of the powdered dried gland. The gross fat and connective tissue should be removed as completely as possible, and the drying should be conducted at a relatively low temperature. The powder is frequently compressed into tablets. It is recommended that the strength of these should be stated in terms of the dried gland. Since there are no tests for the quality, or even identity, of these powdered products, the physician, unless he can himself supervise their preparation, is forced to rely on the general reputation of the manufacturer.

After the description of each gland a list of such preparations as have been submitted to the Council, and which are being marketed in an unobjectionable manner, is given. For the reasons stated, however, the Council disclaims any responsibility for their quality or identity.

Corpus Luteum

It is generally recognized that one or more of the most important of the internal secretions of the ovaries originate in the corpora lutea and the latter have been tried recently to a considerable extent in some of the classes of cases in which the entire gland has been used. Thus, it is stated that in cases of artificial menopause, following operation, the use of the dried corpus luteum has been followed by great improvement. It may be given in the form of tablets, each of which is composed of a dried corpus luteum, obtained from a pregnant animal, usually a pig; or it may be given as "lutein", in twenty grain doses, three times a day, in some cases given continuously, in others periodically when the discomforts are greatest, and continued for about ten days at a time. The "lutein" is made by squeezing out the corpora lutea from the ovaries of the pig obtained at the slaughter house. The corpora are then rapidly dried, powdered, and compressed into tablets. These preparations are stated to frequently give good results when the ordinary ovarian extract made from the dried tissues of the ovary itself fails.

Corpus luteum has also been recommended in obesity associated with amenorrhea and in other conditions of "ovarian insufficiency" and in dysmenorrhea. This substance also, however, is still of questionable value in these various conditions, the evidence being not yet sufficient for judgment.

Drevet recommends that an extract of the corpora lutea, prepared as follows, be used: 1 kilo of finely divided corpora lutea are macerated in the cold for forty-eight hours with a mixture of 500 Cc. glycerine, 500 Cc. distilled water and 10 Cc. sulphuric acid. The liquid is filtered, neutralized with soda and the precipitate after being washed, is dissolved in acetic acid and again precipitated. The precipitate is then dried in vacuo. Dose of this extract, 0.04 Gm. to 0.08 Gm. (⅔ to 1⅓ grain) gradually increased to 0.12 Gm. (2 grains).

DESICCATED CORPUS LUTEUM—Armour.—Desiccated corpus luteum—Armour, consists of the fresh substance from the corpora lutea from cow's ovaries, removed, dried and powdered without the addition of preservative or diluent.

A yellowish powder, having a peculiar odor. Partly soluble in water.

One part represents approximately 5 parts of the fresh corpus luteum substance. It contains a true lipochrome which may be extracted by alcohol, ether or chloroform. On incineration, it should yield not more than 6 per cent. of ash.

Actions and Uses.—See Corpus Luteum.

Dosage.—0.03 to 0.06 Gm. (½ to 1 grain) twice daily.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Mammary Gland

The extracts of the mammary gland are said to have an effect upon the uterus. They have been used in the treatment of profuse and painful menstruation and of uterine and ovarian tumors, but the beneficial results reported can hardly be accepted until confirmed by further observations.

MAMMARY SUBSTANCE—Armour.—Mammary Substance—Armour, consists of the mammary gland of the sheep freed from fat, cleaned, dried and powdered, without the addition of preservative or diluent.

A yellowish to orange colored powder, having a slight peculiar odor. Only partially soluble in water.

One part represents approximately 4½ parts of the fresh mammary gland of the sheep. It contains nucleoproteid which, when treated with dilute sulphuric acid, yields guanin. (S. Fränkel. Descriptive Biochemie, p. 386). Upon incineration, it should not yield more than 9 per cent. ash.

Actions and Uses.—See Mammary Gland.

Dosage.—0.13 to 0.3 Gm. (2 to 5 grains) three times daily.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Mammary Substance Tablets-Armour.—Each tablet contains desiccated mammary substance 0.13 Gm. (2 grains).
Dose.—1 to 3 tablets three times a day.

Ovary

The ovaries produce internal secretions which are necessary for the proper functioning of the uterus and which also have obscure effects on metabolism and the nervous system. Diminution or cessation of the activity of the ovaries (as at menopause, natural or artificial) often leads to a variety of nervous symptoms; irregularities in their activities seems to be sometimes accompanied by dysmenorrhea. Ovarian substance has been administered, often with apparently good results, for the relief of symptoms following the natural or artificial menopause and in dysmenorrhea, intermenstrual pain, etc.

OVARIAN SUBSTANCE—Armour. — Ovarian Substance—Armour, consists of the entire fresh ovaries (including the corpora lutea) of the hog, cleaned, dried and powdered, without the addition of either preservative or diluent.

A yellowish colored powder having a peculiar odor. Partially soluble in water.

One part represents approximately 6¾ parts of the fresh ovary of the hog. It contains gelatin, mucin, nuclein and the active constituent of the corpus luteum. Upon incineration, it should not yield more than 7 per cent. ash.

Actions and Uses.—See Ovary.

Dosage.—0.06 to 0.2 Gm. (1 to 3 grains) three times daily.

Manufactured by Armour & Co., Chicago. Not patented or copyrighted.

Ovarian Substance Tablets-Armour.—Each tablet contains ovarian substance 0.13 Gm. (2 grains).

Dose.—*1 to 2 tablets three times a day.*

PARATHYROID GLAND

The parathyroid gland, even in small doses, has a pronounced action on the course of the tetany resulting from the removal of or injury to the parathyroid glands. Its use checks the convulsions and removes the feeling of fear, the nausea and diarrhea and has undoubtedly at times greatly prolonged life or saved it while the injured parathyroid glands regained their functions. The fresh gland seems to be more active than the dried commercial preparation.

The drug has been used most successfully in tetany following removal of the parathyroids; its use in idiopathic and other non-operative forms of tetany has been much less satisfactory.

DESICCATED PARATHYROID GLAND—Armour.—Desiccated Parathyroid Gland—Armour, consists of the exterior parathyroids of the ox freed from fat, cleaned, dried and powdered, without the addition of preservative or diluent.

A light yellow powder, having a peculiar odor. Partly soluble in water.

One part represents approximately six parts of the fresh tissue. On incineration it should yield not more than 7 per cent. ash. It contains very small amounts of organically combined iodine.

Action and Uses.—See Parathyroid Gland.

Dosage.—0.006 Gm. (1/10 grain) four times a day.

Manufactured by Armour & Co., Chicago.

Parathyroid Tablets, Armour.—Each tablet contains desiccated parathyroid gland 0.003 Gm. (1/20 grain).

PAROTID GLAND

The suggested uses are similar to those for the mammary and ovary; it has been recommended in artificial menopause, intermenstrual pain and other conditions in which the ovary or corpus luteum are used.

DESICCATED PAROTID GLAND—Armour. — Desiccated Parotid Gland—Armour, consists of the fresh parotid gland of the ox, freed from fat, cleaned, dried and powdered, without the addition of either preservative or diluent.

A yellowish colored powder, having a slight peculiar odor. Partially soluble in water.

One part represents approximately 5 parts of the fresh parotid gland of the ox. Upon incineration, it should yield not more than 7 per cent. ash.

Actions and Uses.—See Parotid Gland.

Dosage.—0.2 to 0.3 Gm. (3 to 5 grains) three times daily.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Parotid Tablets-Armour.—Each tablet contains desiccated parotid gland 0.13 Gm. (2 grains).

Dose.—*1 to 2 tablets three times a day.*

PITUITARY GLAND

The removal of this body in animals is followed by symptoms of motor disturbances, depression, emaciation, and rapid death. The infundibular portion of the gland causes, when injected *intravenously*, a rise of blood pressure and slows but strengthens the action of the heart. It contains a substance soluble in water, and not destroyed by boiling, which is stated to cause dilation of the renal vessels and a marked increase in the secretion of urine. The gland has been found to be abnormal in many cases of acromegaly and so is believed by many to have an internal secretion acting on the growth of bones. The anterior lobe is claimed to have properties similar to those of thyroid extract.

The drug has a doubtful effect on the circulation when given by the mouth, but the infundibular portion may be useful in cardiac debility. An extract of this part of the gland has been recommended as a diuretic. The results of the use of the gland in acromegaly are uncertain, but the output of phosphates is said to be increased. It may be given at the first symptom of debility or functional disturbances.

DESICCATED PITUITARY SUBSTANCE (ANTERIOR LOBE)—Armour.—Desiccated pituitary substance (anterior lobe)—Armour consists of the anterior lobe from the pituitary of the ox, separated, dried and powdered without the addition of preservative or diluent.

A light grayish yellow powder, having a slight peculiar odor. Partly soluble in water.

One part represents approximately 4.5 parts of the fresh substance. On incineration, it should yield not more than 6.5 per cent. ash.

Action and Uses.—See pituitary gland above.

Dosage.—0.05 to 0.20 Gm. (1 to 4 grains) in powder or tablet.

Manufactured by Armour & Co., Chicago.

DESICCATED PITUITARY SUBSTANCE (POSTERIOR LOBE)—Armour.—Desiccated pituitary substance (posterior lobe)—Armour consists of the posterior lobe from the pituitary of the ox, separated, dried and powdered without the addition of preservative or diluent.

A light grayish yellow powder having a slight peculiar odor. Partly soluble in water.

One part represents approximately 4.5 parts of the fresh substance. On incineration, it should yield not more than 6.2 per cent. of ash.

Action and Uses.—See pituitary gland.

Dosage.—0.05 to 0.20 Gm. (1 to 4 grains) in powder or tablet.

Manufactured by Armour & Co., Chicago.

PITUITARY BODY, DESICCATED—Armour.—Desiccated pituitary body—Armour, *consists of the dried substance of* the entire pituitary body of the ox, including the infundibulum and the anterior and posterior lobes without the addition of preservative or diluent. It is said to contain all the active principles naturally existing in the gland.

A light yellowish-gray powder, practically odorless and tasteless. One part represents approximately 4 parts of fresh gland.

Actions and Uses.—See pituitary gland.

Dosage.—0.06 to 0.2 Gm. (1 to 3 grains) three times a day.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Pituitary Tablets.—Armour.—Each tablet contains desiccated pituitary body 0.06 Gm. (1 grain).

RED BONE MARROW

Red bone marrow consists largely (more than 90 per cent.) of fat. In new born animals a third or more of this fat consists of lecithin. The marrow of the bones of new-born animals contains iron (up to 1 per cent. or more) in various forms of organic combination. Both lecithin and iron decrease rapidly in the first weeks after birth. The commercial preparations contain very variable amounts of these constituents.

Action and Uses.—Red bone marrow is supposed to stimulate the formation of red blood corpuscles; whatever action it may have in this direction is probably due largely to the iron and lecithin which it contains.

It is recommended in simple and pernicious anemias.

EXTRACT OF RED BONE MARROW.—Extract of red bone marrow is a glycerin extract of the red marrow of bones. It contains about 2 per cent. of proteids, about 0.1 per cent. of lecithin and about 85 per cent. of glycerin.

It is a brownish liquid of an agreeable aromatic taste.

Actions and Uses.—This preparation is claimed to stimulate the formation of the red blood corpuscles.

It is recommended in simple and pernicious anemia, but its value is not yet beyond question.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) in water, milk or wine, three times a day.

Prepared by Armour & Co., Chicago.

SPLEEN

Spleen has been used empirically in anemia, chlorosis, myxedema and various other diseases with no definite results.

DESICCATED SPLEEN—Armour. — Desiccated Spleen—Armour, consists of the spleen of the calf, freed from fat, cleaned, dried and powdered, without the addition of preservative or diluent.

A dark yellowish colored powder, having a peculiar odor. Partially soluble in water.

One part represents approximately 4¾ parts of the fresh spleen substance. It contains nuclein and iron. Upon incineration, it should yield not more than 7 per cent. ash.

Actions and Uses.—See Spleen.

Dosage.—0.13 to 0.25 Gm. (2 to 4 grains) every three or four hours.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Spleen Tablets-Armour.—Each tablet contains desiccated spleen 0.065 Gm. (1 grain).

Dose.—1 to 3 tablets three times a day.

TESTICLE

Subcutaneous injections of testicular extracts were claimed to increase muscular energy from 10 to 20 per cent. Oxidation has been said to be somewhat increased and extracts of the gland have been used in obesity, but the results have been most uncertain. It has also been employed in prostatic hypertrophy and many other conditions.

ORCHIC SUBSTANCE—Armour. — Orchic Substance—Armour, consists of the pulp from fresh ram testicles removed, dried and powdered, without the addition of preservative or diluent.

A light yellow powder, having a peculiar odor. Partly soluble in water.

One part represents approximately 7 parts of the fresh pulp from the ram testicle. Upon incineration, it should yield not more than 10 per cent. ash.

Actions and Uses.—See Testicle.

Dosage.—0.13 to 0.3 Gm. (2 to 5 grains) three times a day.

Manufactured by Armour & Co., Chicago. Not patented or copyrighted.

Orchic Substance Tablets-Armour.—Each tablet contains orchic substance 0.13 Gm. (2 grains).

Dose.—1 to 3 tablets three times a day.

THYMUS GLAND

Little is known as to the functions of the thymus, but it is believed to have an important relation to growth. There also seems to be some relation between the thymus and thyroid, for the former is frequently abnormal in diseases involving the latter (exophthalmic goiter).

The use of thymus is purely empirical. It has been employed in the treatment of exophthalmic goiter, rickets, tuberculosis, hemophilia, and infantile marasmus and atrophy; its use in the latter conditions is said to be the most promising. It is claimed on very doubtful grounds to exert a somewhat favorable effect in certain cases of cancer.

DESICCATED THYMUS—Armour.—Desiccated Thymus—Armour, consists of the fresh thymus gland of the calf freed from fat, cleaned, dried and powdered, without the addition of preservative or diluent.

A very light yellow powder, having a peculiar odor. Partly soluble in water.

One part represents approximately 5 parts of the fresh thymus gland. It is rich in nucleoprotein and in lymphoid tissue. Upon incineration, it should yield not more than 12 per cent. ash.

Actions and Uses.—See Thymus Gland.

Dosage.—0.13 to 0.25 Gm. (2 to 4 grains) three times daily.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Thymus Tablets-Armour.—Each tablet contains desiccated thymus 0.065 Gm. (1 grain).

Dose.—2 to 4 tablets three times a day.

ORPHOL—Bismuthi Beta-Naphtholas.—Orphol is bismuth beta-naphtholate, a bismuth salt of beta-naphthol.

Bismuth beta-naphtholate occurs in the form of a brownish or grayish powder without odor, almost tasteless and insoluble in water. It is slightly soluble in alcohol.

1 to 2 Gm. bismuth beta-naphtholate is shaken in a separator during one hour with 25 Cc. chloroform and 25 Cc. concentrated hydrochloric acid, and then 50 Cc. water added and again shaken. The chloroform solution drawn off and the acid mixture extracted with three more portions of 10 Cc. chloroform and the combined extracts evaporated and dried to constant weight over sulphuric acid, a residue should remain weighing at least 15 per cent. of the material used, and should respond to tests of identity for beta-naphthol.

The acid solution from which the naphthol has been extracted is transferred to a beaker, diluted to 200 Cc., heated to boiling, ammonia water added till turbidity appears, then sufficient hydrochloric acid to clear up the turbidity and then 50 Cc. of 10 per cent. ammonium phosphate solution is added to the boiling liquid. The precipitate is allowed to subside, the clear liquid decanted through a tared porcelain Gooch crucible, the precipitate washed with hot water by decantation and finally transferred completely to the crucible. The precipitate and crucible are dried, placed in a nickel crucible, and exposed to the full heat of a bunsen flame till the weight is constant. The weight of the [illegible] hosphate multiplied by 0.6869 should yield a [illegible] bismuth, Bi) equal to not less than 60 per [illegible] taken.

1 to 2 Gm. bismuth beta-naphtholate is weighed to a small asbestos plugged percolating tube. 5 Cc. chloroform added, mixed by means of a glass rod, and allowed to percolate into a tared dish. When the liquid ceases to drop, a further portion of 5 Cc. of chloroform is poured into the percolator and also allowed to percolate into the tared dish. The stem of the percolator is washed with a little chloroform, and the combined washings and the percolates allowed to evaporate spontaneously and the residue brought to constant weight over sulphuric acid. The residue should not exceed 1 per cent. of the material taken.

Actions and Uses.—Bismuth beta-naphtholate is decomposed into its constituents in the intestines, where it exerts the effects of bismuth salts and of beta-naphthol. Hence it is used in catarrhal and fermentative gastroenteric disorders, such as gastritis, dysentery, diarrhea, etc. (See note under Betanaphthol Benzoate.)

Dosage.—For children 0.1 to 0.3 Gm. (1½ to 5 grains) and for adults 1.5 to 5 Gm. (22 to 75 grains) daily.

A mixture of beta-naphtholate with acacia should be avoided as a viscid precipitate rapidly becoming hard is likely to be formed.

Manufactured by the Chemische Fabrik von Heyden, Radebeul near Dresden, Germany (Schering & Glatz, New York). U. S. patent No. 516,358 (March 13, 1894; expires 1911)). U. S. trademark No. 27,482.

Orphol Tablets.—Each tablet contains orphol, 0.3 Gm. (5 grains).

ORTHOFORM-NEW — Meta-Amido-Para-Oxybenzoate of Methyl.—Orthoform-new is methyl meta-amino-para-oxybenzoate, $C_6H_3.NH_2.OH.COO(CH_3)$, 3:4:1 = $C_8H_9O_3N$, the meta-amino-para-oxybenzoic acid ester of methyl alcohol.

It is prepared by the nitration of para-oxybenzoate of methyl and reduction of the nitro-product obtained.

It occurs in a fine, white, crystalline powder, neutral in reaction, and melting at 141° to 143° C. (285.8° to 289.4° F.), odorless and tasteless. It is scarcely soluble in water, but soluble in 5 or 6 parts of alcohol and 50 parts of ether. It is decomposed by boiling with water or by warming with alkalies or their carbonates, into methyl alcohol and paroxybenzoic acid. When crystallized from chloroform it sometimes assumes the form of white crystals melting at 110° to 111° C. (230° to 231.8° F.) returning on melting to the ordinary form.

The filtrate obtained after shaking a small portion with water produces a fugitive color with ferric chloride and should not give a reaction with silver nitrate. A solution of 0.1 Gm. in 2 Cc. of water by the aid of hydrochloric acid is colored yellowish red on addition of sodium nitrate and then deposits a yellow precipitate, deepening to red on exposure to the air.

It is decomposed by heating with water; it is incompatible with alkalies and their carbonates.

Actions and Uses.—Orthoform-new is a local anesthetic, resembling cocaine in its local action, but not penetrating the tissues on account of its insolubility. It has practically no action on the unbroken skin and produces no irritation except slight corrosion about the place of application. It is somewhat antiseptic and practically non-toxic in the usual doses.

It is used internally to relieve the pain of gastric ulcer. Since it acts only on ulcerated surfaces, the relief of pain has been assumed to be evidence of the existence of an open ulcer. It has been applied locally as an analgesic to wounds of every description. It has been used in dentistry, in nasal catarrh, hay fever, etc.

Dosage.—Internally, 0.5 to 1 Gm. (8 to 15 grains) in emulsion; locally, in substance as a dusting powder or mixed with milk sugar for insufflation, dissolved in ether and mixed with oil for pencilings, or as salve with wool fat, etc.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patents Nos. 610,348 (Sept. 6, 1898; expires 1915) and 625,158 (May 16, 1899; expires 1916).

ORTHOFORM-NEW HYDROCHLORIDE. — Orthoform-new hydrochloride, $C_8H_9O_3N.HCl$, is the hydrochloride of methyl meta-amino-para-oxybenzoate.

It is a white, crystalline powder, having an indefinite *melting* point and an acid reaction. It is soluble in 10 parts of water. Its reactions are the same as those of *orthoform-new, except that it* gives a reaction for chlorides with silver nitrate and has an acid reaction; 3.65 Gm. dissolved in 50 Cc. of alcohol require not *less than 17.8* Cc. nor more than 18 Cc. of normal solution of sodium hydroxide to produce a neutral liquid.

Its incompatibilities are the same as those of orthoform-new.

Actions and Uses.—The actions, uses and dosage of this compound are similar to those of orthoform-new, which see.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

OSMIUM TETROXIDE—Osmium Tetroxidum.—Osmic acid, Osmium anhydride-Osmium tetroxide, OsO_4, the anhydride of a theoretical acid is obtained by the action of nitrohydrochloric acid on osmium.

Osmium tetroxide occurs in the form of white or yellowish crystals which are slowly soluble in water (1-50); it is also soluble in alcohol and ether but the solutions decompose. Osmium tetroxide melts at 40° C. (104° F.) and boils at about 100° C. (212° F.). It vaporizes even at ordinary temperatures yielding very irritating and extremely poisonous vapors, attacking the eyes and lungs. *It is decomposed by* contact with organic substances. (Brit. Codex, 1907).

From aqueous acidified solutions of osmium tetroxide, hydrogen sulphide *precipitates* brown osmium sulphide, OsS_4 which is insoluble in ammonium sulphide. An aqueous solution of osmium tetroxide decolorizes indigo solution. Iodine is liberated from potassium iodide solutions by osmium tetroxide. Treated with sulphuric *acid*, aqueous solutions of osmium tetroxide become yellow, turning to brown and finally becoming blue; tannic acid produces a red color becoming brown; ferric chlorid and alcohol *reduce osmium tetroxide to the metal osmium.*

Action and Uses.—Intraneural injections are used to produce degeneration of nerves for the relief of persistent neuralgias. The treatment is best applied by injecting ½ to 1 Cc. of a fresh 1 to 2 per cent. solution directly into the, preferably exposed, nerve. The result is sometimes immediate, but more commonly it is not complete until after one or two weeks, or it may even fail entirely. If successful, the effects may persist for several months, when it may become necessary to repeat the injection as the cure is rarely, if ever, permanent. The local reaction is always painful, but not serious. It is not advisable, perhaps, to use osmium tetroxide in renal disease.

OVOFERRIN—Ferri Vitellinum Syntheticum.—Ovoferrin is a solution containing 5 per cent. of an artificial proteid-product in which iron is present in the so-called "organic" or "masked" form (a form which does not give the iron-test directly) equivalent to 0.4 Gm. metallic iron to each 100 Cc. The solution also *contains* 9 *per cent.* of alcohol.

Ovoferrin is prepared by modifying serum-albumin by electrolysis, producing a proteid which is classed by the manufacturers as a vitellin, and introducing ferric hydrate into this proteid by heating under pressure. The "vitellin" constituent of this preparation should not be confounded with the well-known vitellin of yolk of eggs.

The solution has a reddish-brown color, little odor, and a flat, slightly aromatic and alcoholic taste.

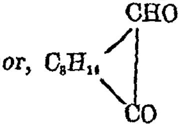
The solution does not give a blue color on the addition of potassium ferrocyanide solution; a blue tint develops slowly if an equal volume of 5 per cent. hydrochloric acid is added to the mixture; a deep blue color develops at once if this mixture is boiled (difference from the egg yolk).

The solution is not precipitated by boiling, but gives precipitates with the alkalies, with which it is incompatible. It is also precipitated on half saturation with ammonium sulphate. It is not precipitated by acids.

Actions and Uses.—Ovoferrin is stated to be not appreciably affected by the gastric juice, a 0.5 per cent. solution of hydrochloric acid liberating its iron very slowly and incompletely. The product ranks with the other forms of artificially masked iron, which are devoid of the local action *of the soluble* inorganic iron salts, and, according to some authorities, are more readily absorbed and utilized.

Dosage.—8 to 16 Cc. (2 to 4 fluidrams) corresponding to 0.03 to 0.06 Gm. (½ to 1 grain) of elemental iron three times a day.

Manufactured by A. C. arnes Co., Philadelphia. U. S. trademark.



OXAPHOR.—Oxaphor is a 50 per cent. solution of oxycamphor, $C_8H_{14}\begin{cases}CHOH\\CO\end{cases} = C_{10}H_{16}O_2$, a derivative of camphor in which a hydrogen atom has been replaced by a *hydroxyl* group.

Oxycamphor is prepared by reducing camphor quinone $C_8H_{14}(CO)_2$ by *means of zinc dust* and acids, extracting the oxycamphor from the liquid product of the reaction with an immiscible solvent and purifying it by distillation with steam.

Oxycamphor is a white crystalline powder, neutral in reaction, melting at 203° to 205° C. (*397.4° to 401° F.*). It is soluble in about 50 parts of cold water, more soluble in warm water, and readily soluble in all organic solvents except petroleum benzin, in which it is soluble, but *from* which it *crystallizes in feathery* aggregations. On prolonged keeping it is prone to undergo decomposition, but it keeps permanently in alcoholic solution. It volatilizes gradually at ordinary temperature and readily with steam.

Oxycamphor, being decomposed on prolonged exposure to the air, is marketed only in the form of the 50 per cent. alcoholic solution under the name of "oxaphor."

Oxaphor should be completely soluble in alcohol and in benzene, forming clear solutions. Its filtered aqueous solution after acidulation with nitric acid should *not afford a precipitate* with silver nitrate or barium chloride. When incinerated it should yield no weighable residue.

Actions and Uses.—Oxaphor is a depressant to the respiratory center, but is said *to have no effect on circulation* and secretion.

It is said to be useful as a substitute for morphine in respiratory disorders, chiefly in cardiac dyspnea and asthma. It is said to have been used with advantage in renal affections, in emphysema, bronchitis, etc. Freedom *from undesirable* side-effects is claimed as an advantage over morphine.

Dosage.—2 to 3 Gm. (30 to 45 *grains*) of *oxaphor* in a little water, wine, syrup or other desirable adjuvant.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. *patent No.* 610,361 (Sept. 6, 1898; expires 1915).

OXYNTIN.—Oxyntin is a compound of protein and hydrochloric acid containing 5 per cent. hydrogen chloride (absolute hydrochloric acid) in unstable combination.

Oxyntin is prepared by combining hydrochloric acid with the albumin of fresh egg, desiccating the product at low temperature, and standardizing it to a uniform content of hydrochloric acid.

Oxyntin is a dry, granular powder, readily miscible with water, to which it imparts but a slightly acidulous taste.

The method of assay by which the acidity is determined is as follows:

1. About 1 Gm. oxyntin is weighed and mixed with 20 to 25 Cc. water and then *titrated with standard sodium hydroxide,* phenolphthalein being used as the indicator, and the result calculated to hydrogen chloride.

2. (a) About 3 Gm. oxyntin is weighed moistened with sodium carbonate solution in excess, dried, charred and extracted with hot water until free from chloride. The extract is slightly acidified with nitric acid and neutralized by the addition of an excess of calcium carbonate. This solution is titrated with standard silver nitrate potassium chromate being *used as an indicator.* From the result the total chloride content of oxyntin is calculated.

(b) About 3 Gm. oxyntin is weighed and treated as in 2 (a), the addition *of* sodium carbonate being *omitted*. From this result the fixed chloride is calculated.

The volatile chloride is calculated from the difference in the results between (a) and (b), and expressed as hydrogen chloride.

Actions and Uses.—Oxyntin is said to be useful as a substitute for dilute hydrochloric acid in the digestion of protein.

Dosage.—Being *one-half the strength* of diluted hydrochloric acid, U. S. P., oxyntin may be given 0.3 to 1.0 Gm. (5 to 15 grains) dry upon the *tongue* or in capsules, *followed* by a draught of water; or mixed with two or three tablespoonfuls of cold water, plain or sweetened to taste.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 50,968.

PARA COTO—(Coto[1]).—Para Coto is the bark of an undetermined South American tree, probably a species of Cryptocarya.

Para Coto occurs in pieces which are *of considerable* size and thickness, 30 cm. (12 in.) wide and 1.5 cm. (⅝ in.) thick. The outer surface is of reddish-brown or cinnamon-brown color. It is sometimes fissured longitudinally and transversely, and sometimes *nearly smooth, with occasional patches* of whitish cork. The inner surface is coarsely striated. It breaks with a fibrous, splintery fracture, and the smoothed transverse section exhibits a thin, brown cork within, which is a narrow cortex separated by a line of *sclerenchymatous cells from the very thick bast,* which is well characterized by the presence of abundant groups of sclerenchymatous cells. The odor is spicy and characteristic, the taste aromatic and pungent. (Para coto is exported from Para at the mouth of the Amazon, and should therefore be called Para coto

---

[1] While commercially, Para coto and coto are sold *indiscriminately*, botanists make a definite distinction between them.

of Para coto is paracotoin, an indifferent iple along with hydrocotoin, methyl hydrocotoin protocotoin, methyl protocotoin (oxyleucotoin), phenyl coumarin, piperonylic acid, volatile oil, resin and tannin.

Para coto is distinguished from coto by the action of nitric acid on the ether extractive matter. In the case of Para coto the result is the formation of a yellow color and in the case of coto a red color appears.

Actions and Uses.—Paracotoin is irritant to the gastrointestinal tract and is similar to cotoin but is weaker. Para coto is used like coto as an appetizer and for diarrhea and dysentery and similar disorders.

Dosage.—0.05 to 0.5 Gm. (1 to 8 grains).

PARACOTOIN.—Paracotoin is a principle, $C_{12}H_8O_4$, from Para coto.

Para coto is extracted with ether and the ether extract distilled. The residue is fractionated by repeated crystallizations from hot alcohol. The first body to separate out is paracotoin.

Paracotoin is a pale yellow, crystalline body, neutral in reaction, tasteless and odorless, melting at 149°-152° C. (300.2°-305.6° F.). It is difficultly soluble in water, but easily in ether, chloroform and boiling alcohol. Concentrated sulphuric and nitric acids dissolve it, forming a yellowish-brown solution. On boiling with a solution of caustic alkalies, a colorless crystalline body, melting at 82°-83° C. (179.6°-181.4° F.), and having the odor of coumarin is formed; this body is acetopiperon (paracumarhydrin) $C_9H_8O_3$ or $C_6H_3\ O_2CH_2.CO.CH_3$, and paracotoic acid $C_{12}H_{10}O_5$ a yellow amorphous mass melting at 108° C. (226.4° F.). Paracotoin fused with potassium hydroxide yields principally piperonylic acid $C_8H_6O_4$.

1 Gm. of paracotoin shaken up with 10 Cc. of fuming hydro bromic acid forms a semi-solid mass of yellow crystals, which on drying over potassium hydroxide lose hydrobromic acid. This residue decomposed with water and recrystallized forms paracotoin, recognized by its crystalline form and melting point.

By gradually adding about 1 Gm. paracotoin to about 10 Cc. concentrated nitric acid, a red-brown solution will result, which, when heated for a short time on the water bath and cooled, deposits a yellow crystalline mass. This product recrystallized from acetone and then from benzene or glacial acetic acid forms golden yellow crystals, melting at 195° C. (323.0° F.). This body is dinitro paracotoin, probably of the formula $C_{12}H_6\ (NO_2)_2O_4$.

An excess of bromine added to a 10 per cent. solution of paracotoin in chloroform cooled to 0° C. produces a deep yellow precipitate, which loses hydrobromic acid, and when recrystallized from alcohol forms the mono-bromide of paracotoin($C_{12}H_7BrO_4$), melting at 200°-201° C. (392°-393.8° F.).

Actions and Uses.—See para coto.

Dosage.—0.06 to 0.18 Gm. (1 to 3 grains).

Actions, Uses and Dosage.—Bitter stomachic, 0.002 to 0.02 Gm. (1/30 to 1/3 grain) before meals.

PERHYDROL—Thirty per cent. Solution of Hydrogen Dioxide.—Perhydrol is a 30 per cent. solution of hydrogen dioxide which is free from acid.

While perhydrol is stable, dilutions of perhydrol rapidly deteriorate unless they are preserved by the addition of some acid.

Actions and Uses.—By suitable dilution a preparation is obtained equivalent to the official solution of hydrogen dioxide. An advantage is claimed for this preparation that it is less irritating on account of the absence of acid. The full strength preparation is said to be useful as an application to nevi, ulcers, gummata, etc. Diluted one-half to two-thirds, it may be applied to syphilitic ulcers, gangrenous processes, ulcerating buboes, in endometritis, suppuration of the middle ear, etc.

Manufactured by E. Merck, Darmstadt, Germany. (Merck & Co., New York). U. S. trademark No. 44,147.

PHENOCOLL HYDROCHLORIDE — Aminoacetphenetidini Hydrochloridum. — Glycocoll-Paraphenetidin Hydrochloride — Phenamine.—Phenocoll hydrochloride is the hydrochloride of amino - acet - phenetidin, $C_6H_4.OC_2H_5NH(CH_2NH_2.CO)HCl = C_{10}H_{14}O_2N_2.HCl$, a synthetic base produced by the combination of phenetidin (paraamidophenetol) and glycocoll (aminoacetic acid). Amino acet-phenetidin (phenocoll), $C_6H_4.OC_2H_5.NH(CH_2NH_2.CO)$, differs from acetphenetidin (phenacetin), $C_6H_4.OC_2H_5.NH(CH_3.CO)$, in that one hydrogen atom in the acetyl group has been replaced by the NH_2 group.

It ion of chloracetylchloride on phenetidin, the reaction with ammonia, neutralizing (phenocoll) so produced with hydrochloric acid, and crystallization.

It is a white, microcrystalline powder, soluble in 16 parts of water at the ordinary temperature, more soluble in hot water, from which it crystallizes in cubes, while from hot alcoholic solution it crystallizes in needles. It is barely soluble in chloroform, ether or benzene (benzol). The free base (phenocoll) obtained by precipitating the aqueous solution with fixed alkalies or their carbonates forms white, matted needles, containing one molecule of water. In its hydrated condition it melts at 95° C. (203° F.), while the anhydrous base melts at 100.5° C. (212.9° F.). It is stable and not chemically affected by acids or alkalies unless subjected to prolonged boiling with these reagents, by which phenocoll is split into phenetidin and glycocoll.

It should produce a clear solution with 30 parts of water, a turbidity indicating the presence of di- or tri-phenocoll, and the solution should not produce a red color with ferric chloride, showing absence of free phenetidin. No ammonia should be evolved on the addition of sodium hydroxide to the warm solution, and the precipitated base should be of a pure white color.

Phenocoll hydrochloride is incompatible with soluble hydroxides or carbonates.

Actions and Uses.—Phenocoll hydrochloride is similar to acetphenetidin (phenacetin) in its effects and acts as an antineuralgic and antipyretic. It is claimed by some observers to be less depressing than other antipyretics derived from aniline, such as acetanilid and acetphenetidin. It has been asserted to have an antiperiodic action and to be efficient as a substitute for quinine in malaria and free from unpleasant by-effects. Its use for this purpose is, however, to be deprecated, for it obviously obscures the symptoms only and does not destroy the malarial parasite. In somewhat larger doses than are usually employed it is said to have a beneficial action in rheumatic fever, but is both more dangerous and less efficient than the salicylates. See Acetphenetidin.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in powder, dissolved in water before taking; hypodermically, in 0.25 to 0.5 Gm. (4 to 8 grains) doses.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 543,214 (July 23, 1895; expires 1912).

PHENOCOLL SALICYLATE.—Phenocoll salicylate, $C_6H_4.OC_2H_5.NH(CH_2NH_2.CO).C_6H_4.OH.COOH = C_{17}H_{20}O_5N_2$, is the salicylate of the synthetic base phenocoll (see phenocoll hydrochloride).

It is prepared by neutralizing a hot aqueous solution of salicylic acid with phenocoll (obtained as described under phenocoll hydrochloride) and cooling the solution.

It forms fine, white, crystalline needles, having a sweetish taste, sparingly soluble in cold water (1 :200), readily soluble in hot water. It gives a violet reaction with ferric chloride.

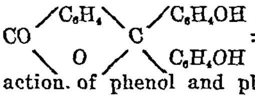
It is incompatible with soluble hydroxides and carbonates and with bodies which are incompatible with the salicylates in general.

Actions and Uses.—It combines the therapeutic action of phenocoll (antipyretic, analgesic, see phenocoll hydrochloride) with those of salicylic acid (antiseptic, antirheumatic).

It is said to be useful in rheumatism, gout, chorea, pleuritis and fevers, especially in influenza, but is more toxic tnan the salicylates alone.

Dosage.—1 to 2 Gm. (15 to 30 grains).

PHENOLPHTHALEIN.—Phenolphthalein,



$$CO\begin{matrix}\diagup C_6H_4 \diagdown \\ \\ \diagdown\ O\ \diagup\end{matrix}C\begin{matrix}\diagup C_6H_4OH \\ \\ \diagdown C_6H_4OH\end{matrix} = C_{20}H_{14}O_4$$

is a product of the interaction of phenol and phthalic anhydride.

It may be prepared by heating together 10 parts of phenol 5 parts of phthalic anhydride and 4 parts of concentrated sulphuric acid for 10 to 12 hours at 115° to 120° C. (239° to 248° F.). The product of the reaction is boiled with water, and the residue dissolved in soda lye. From this solution the phenolphthalein is precipitated by the addition of acetic acid. The precipitate after washing is dissolved in six times its weight of absolute alcohol and the solution decolorized by animal charcoal. A part of the alcohol is then distilled, the mixture filtered and the phenolphthalein separated from the filtrate by the addition of water.

Phenolphthalein occurs as a crystalline or amorphous powder, white or grayish-white, melting at 250° to 253° C. (482° to 487.4° F.). It is soluble in 600 parts of water and in 10 of alcohol. Its solutions in acid liquids are colorless, but turn red when the liquid is alkaline. The red color of the solution disappears if it be boiled with zinc dust, phenolphthalin, $C_{20}H_{16}O_4$, being formed.

Phenolphthalein heated on platinum foil should burn, leaving no residue.

Actions and Uses.—Phenolphthalein acts as a purgative, but appears to possess no further physiologic action. A case of poisoning from taking 1 Gm. (15 grains) is reported.

Dosage.—For adults the average dose is 0.1 to 0.2 Gm. (1.5 to 3 grains) given as powder, in cachets, capsules or pills. It may be given with safety in doses of 0.5 Gm. (8 grains), and these doses seem to be necessary to secure its effects in bedridden patients or in obstinate cases.

PHLORIDZIN—Phloridzinum.—Phlorizin.—Phloridzin is a glucoside, $C_{21}H_{24}O_{10} + 2H_2O$, from the root of the apple, pear, cherry, etc.

Phloridzin occurs as minute white slightly pinkish crystals, of a silky texture, or as a pale yellow light crystalline powder.

odorless and having a bitter but later a sweet taste. It is sparingly soluble in cold but freely soluble in hot water, from which it crystallizes on cooling. It is soluble in alcohol (1-4) and sparingly soluble in ether. The solutions are lævogyrate. At 100° C. (212° F.) it loses water and at 107° C. (224.6° F.) melts When heated to 130° C. (266° F.) it becomes solid again and then melts again at 17° (338° F.). At 200° (392° F.) it assumes a red color, due to the formation of rufin.

Boiled with dilute acids it is converted into sugar, phlorose and phloretine. Exposed to air in the presence of ammonia it assumes a purple color. Cold concentrated sulphuric acid dissolves it to a yellow solution and at 25°-50° C. (77°-122° F.) it becomes red.

Action and Uses.—Phloridzin destroys malarial parasites. When administered to man or animals, it produces glycosuria of renal origin. Polyuria is also produced. It has been recommended as an antiperiodic in malaria, but its use is not justified in view of the possible injury to the kidney which it may cause. It is used as a means of testing the functional activity of the kidney.

Dosage.—To test the permeability of the kidney 0.005 Gm. (1-12 grain) is dissolved in 1 Cc. (15 minims) of a 0.5 per cent. solution of sodium carbonate and injected hypodermically. Glucose should appear in the urine in from 15 minutes to one-half hour and the secretion of sugar should continue for from two to four hours. The test gains in diagnostic value if the urine of each kidney is collected separately. Phloridzin may be given per os in pills massed with glucose syrup or suspended in a mixture with acacia or tragacanth. The internal dose is 0.3 to 0.6 Gm. (5 to 10 grains).

PICRIC ACID—Acidum Picricum.—Acidum Picricum (Pharm. Française, 1908). Picric acid is 2,4,6-tri-nitro-1-phenol, $C_6H_3O_7N_3$ or $C_6H_2.OH.(NO_2)_3(1:2:4:6)$, an acid obtained by nitrating phenol.

Picric acid occurs as orthorhombic yellow prisms, odorless, but with a very bitter taste, with a specific gravity of 1.81 and melting at 122° C. (251.6° F.). It is explosive when heated to a high temperature. It is slightly soluble in cold water, imparting a yellow color to a very large volume of water. It is soluble in 81 parts water at 20° and in 25 parts at 80°. It is easily soluble in alcohol and in 5.7 parts of dry pure ether it dissolves to an almost colorless solution. (Pharm. Française, edit. 1908.)

Aqueous solutions dye organic matter, such as silk, wool and skin a characteristic yellow, but do not dye vegetable fibre.

1 part picric acid dissolved in 9 parts water at 60° C. and a warm solution of 2 parts potassium cyanide in 4 parts water when mixed give a red color. This solution on being cooled yields reddish brown plates of potassium picrocyanin or isopurpuric acid $C_8H_4KN_5O_6$.

Ammonium sulphide produces a red color in solutions of picric acid which becomes deeper on heating. (Pharm. Française, edit. 1908.)

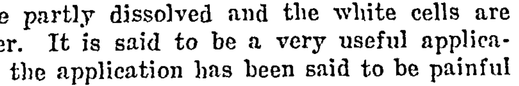
The absence of salts of picric acid is demonstrated by its complete solubility in ether. (Pharm. Française, edit. 1908.)

Action and Uses.—Picric acid is an irritant to the skin and mucous membranes. Taken internally, it may produce nausea, vomiting and diarrhea. The urine is colored red or yellow and may show signs of nephritis. The skin and mucous membranes may be stained yellow and thus jaundice may be simulated. Red blood cells are partly dissolved and the white cells are increased in number. It is said to be a very useful application for burns, but the application has been said to be painful in certain cases. Toxic symptoms have been produced in some instances, especially in children, by absorption through the skin.

Dosage.—0.025 to 0.1 Gm. (½ to 2 grains). A solution containing 6 parts of picric acid, 60 parts of alcohol to 1,000 parts of water has been recommended for local application.

PIPERAZINE COMPOUNDS

PIPERAZINE—Piperazina.—Diethylenediamine.—Ethylene-imine.—Piperazine,



$$NH\left\langle{CH_2.CH_2 \atop CH_2.CH_2}\right\rangle NH + 6H_2O = C_4H_{10}N_2 + 6H_2O,$$

is a synthetic base obtained by the condensation of two $.CH_2.CH_2.$ groups, with two :NH groups, containing 6 molecules of water of crystallization.

It is prepared by the interaction of ammonia on ethylene chloride, treating the complex mixture of different salts produced with sodium nitrate at 60° to 70° C. (140° to 158° F.), purifying the sparingly soluble dinitroso-piperazine, which separates as a scaly crystalline mass, by repeated crystallizations from hot water, and subjecting the pure dinitroso-piperazine so obtained to distillation with an alkali. It is also prepared by several other patented processes.

It forms colorless, lustrous, tabular crystals, hygroscopic, which melt at 44° C. (111.2° F.). It is extremely soluble in water, forming strongly alkaline but non-caustic solutions. It is not so readily soluble in alcohol. It is volatile. It forms soluble salts with acids, and with uric acid it forms a very soluble salt (in 50 parts of water; lithium urate requires 368 parts of water). It is not affected by chromic acid, but is slowly oxidized by potassium permanganate.

In aqueous solution it gives a characteristic scarlet-red precipitate with potassium-bismuth iodide, a white precipitate with Nessler's reagent, and is precipitated light blue by copper sulphate, white by mercuric chloride, lemon-yellow (crystalline) by picric acid and grayish by tannic acid.

It is incompatible with acetanilide, acetphenetidin (phenacetin), alkaloidal salts, nitrites, metallic salts in general and with picric and tannic acids. It should not be exposed to moisture.

Actions and Uses.—A part of the piperazine ingested passes undecomposed into the urine and is claimed by some to form a very soluble compound with the urinary uric acid; others state that the piperazine which is excreted is largely in combination with the stronger mineral acids. It has been shown that urine containing piperazine has no greater solvent power on uric acid than ordinary urine. Piperazine seems to produce no symptoms in man or animals, even when administered in fairly large quantities, although it is stated that, after large doses, tremors, clonic spasms and general depression have occurred.

Piperazine is claimed by the manufacturer to be useful in the prevention of the formation of renal and vesical calculi and for the relief of irritation of the bladder due to excess of uric acid in the urine and in cases of chronic gout, rheumatism, renal colic, etc. The attempt to secure the solution of uric acid in the body by this as well as other remedies has not been successful in the experience of many clinicians. There is no reliable evidence to warrant the acceptance of these claims.

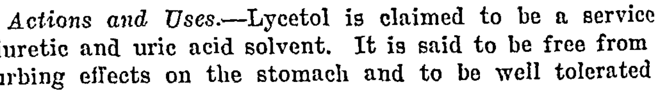
Dosage.—0.3 to 0.6 Gm. (5 to 10 grains); daily dose, 1 to 2 Gm. (15 to 30 grains). Owing to its hygroscopic character, it is impracticable to dispense it in powder; it should, therefore, be dispensed in solution in water, plain or carbonated, but in quantities sufficient for a day's supply only.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 482,108 (expired). Also by Chemische Fabrik auf Actien vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 543,214 (July 23, 1895; expires 1912).

Piperazine Tablets, 16 grains. Each tablet contains piperazine 1.03 Gm. (16 grains).

Prepared by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York).

LYCETOL.—Lycetol is dimethyl piperazine tartrate,



$$NH\left\langle{CH(CH_3).CH_2 \atop CH_2CH\ (CH_3)}\right\rangle NH + H_2C_4H_4O_6 = C_{10}H_{20}O_6N_2,$$

a tartrate of a methyl derivative of diethylenediamine (piperazine).

It is prepared by the distillation of glycerin with ammonium chloride or bromide, reduction of the dimethylpyrazine (isolated from the distillation products) with metallic sodium and converting the base so obtained, after purification, into the tartrate.

It is a white, odorless powder, melting at 250° C. (482° F.), anhydrous, but slightly hygroscopic. It is soluble in water, forming agreeably acidulous solutions.

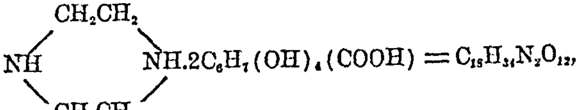
It is incompatible with alkalies which liberate the insoluble free base.

Actions and Uses.—Lycetol is claimed to be a serviceable diuretic and uric acid solvent. It is said to be free from disturbing effects on the stomach and to be well tolerated for long periods.

Dosage.—1 to 2 Gm. (15 to 30 grains), well diluted, and preferably in carbonated water, sweetened with sugar if desired.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York) U. S. patent No. 523,018 (July 17, 1894; expires 1911). U. S. trademark No. 24,722.

SIDONAL—Piperazinæ Quinas.—Piperazine Quinate—Kinate of Piperazine.—Sidonal is piperazine quinate,



$$NH\left\langle{CH_2CH_2 \atop CH_2CH_2}\right\rangle NH.2C_6H_7(OH)_4(COOH) = C_{18}H_{34}N_2O_{12},$$

the normal salt of piperazine and quinic acid.

It is prepared by heating 1 molecule of piperazine with 2 molecules of quinic acid and maintaining the mixture at its melting point for some time, or by dissolving equivalents of piperazine and quinic acid in the smallest practicable quantity of water, concentrating the solution on a water bath, removing the residual water by repeated additions of small quantities of alcohol, evaporating and finally drying the residue in a vacuum.

It forms a white, crystalline powder, melting at 168° to 171° C. (334.4° to 339.8° F.), and having a faint acid taste and reaction. It is very soluble in water and forms salts on mixing the aqueous solution with solutions of alkali carbonates and evaporating to dryness.

It responds to tests for piperazine (precipitate with potassium-bismuth iodide, etc.) and quinic acid.

Its incompatibilities are those of the alkaloidal salts generally.

Actions and Uses.—Sidonal is said to be useful as a uric acid solvent in gout, neurasthenia, etc.

Dosage.—1 to 1.3 Gm. (15 to 20 grains) 5 or 6 times a day, dissolved in water.

Manufactured by Vereinigte Chemische Werke Actiengesellschaft, Charlottenburg, Germany (Victor Koechl & Co., New York). Eng. patent No. 11,420. U. S. patent No. 665,879 (Jan. 15, 1901; expires 1918). U. S. trademark No. 34,706.

POLLANTIN, FALL—Dunbar's Serum.—An antitoxic serum from horses treated with pollen toxin derived from ragweed.

Horses are injected with gradually increased doses of pollen toxin (derived from ragweed), which results in the formation of an antitoxin after two or three months of treatment. The horses are then bled and the strength of the serum is estimated by determining the proportion which will prevent the action of a solution of pollen toxin, of which one drop is barely sufficient to produce a reaction when instilled into the conjunctival sac of a hay-fever patient. The serum is preserved by the addition of 0.25 per cent of phenol.

It is a clear, slightly yellowish liquid, having the odor and taste of a dilute solution of phenol. On standing, the liquid deposits a slight precipitate. The liquid is alkaline in reaction and not irritating to the normal conjunctiva.

It should neutralize the effects of a solution of pollen toxin when mixed with it and dropped into the eye or when a drop is applied immediately after a drop of the toxin solution.

The liquid does not keep well if exposed to the air. When it becomes cloudy or a bad odor develops, decomposition has occurred and the preparation should no longer be used.

Actions and Uses.—It has no pharmacologic action except the neutralization of the pollen toxin. The serum is not intended for use hypodermically. It is employed for the relief of hay fever and it seems to be effective in a proportion of cases. It may be used as prophylactic.

Dosage.—One drop should be instilled by means of a pipette into the outer angle of each eye and one or two drops into one nostril, the other being kept closed, every morning before rising. If the first application causes sneezing or reddening of the mucous membrane of the eye, the directions are to repeat the application, even for the fourth time, if necessary.

Manufactured by Schimmel & Co., Miltitz, near Leipsic, Germany (Fritzsche Bros., New York). U. S. patent No. 745,333 (Dec. 1, 1903; expires 1920). U. S. trademark No. 40,562.

POLLANTIN POWDER, FALL.—A powder obtained by evaporating, *in vacuo*, pollantin serum derived from ragweed toxin at about 45° C. (113° F.) and mixing it with sterilized sugar of milk.

It is a fine, slightly yellowish, almost odorless powder, almost but not entirely soluble in water, and having a slight alkaline reaction. The tests are the same as for the liquid. It should reduce Fehling's solution. The powder keeps well.

Actions and Uses.—The same as those of the liquid.

Dosage.—The powder is applied to the eyes by dusting on the conjunctiva and to the nose by snuffing into one nostril, the other being closed, a piece as large as a lentil.

Manufactured by Schimmel & Co., Miltitz, near Leipsic, Germany (Fritsche Bros., New York). U. S. trademark No. 40,562.

POTASSIUM MERCURIC-IODIDE—Potassii Hydrargyroiodidum.—Potassium mercuric-iodide is a complex salt formed by interaction of mercuric iodide with potassium iodide.

When mercuric iodide is added to an excess of potassium iodide solution a colorless liquid is obtained containing the mercuric iodide as a complex salt, approximately K_2HgI_4 (or $2KI + HgI_2$). Under suitable conditions (Naylor and Chappell, Pharm. J., Mar. 7, 1908, p. 315) the salt having the composition $K_2HgI_4 + 3H_2O$ (or $2KI + HgI_2 + 3H_2O$) may be obtained in yellow needle-shaped crystals.

Potassium mercuric-iodide is deliquescent and is decomposed by water.

Actions and Uses.—The same as mercuric iodide, over which it is claimed to have some advantages because of its solubility.

Proprietary Preparation:

SOLOID MERCURIC POTASSIUM IODIDE.—Tablets said to contain in each tablet mercuric potassium iodide (potassium mercuric-iodide) ($HgI_2 2KI = K_2HgI_4$) 0.113 Gm. (1.75 grains); an excess of potassium iodide, which prevents the decomposition of the potassium mercuric-iodide when water is added, and a trace of coloring matter.

Prepared by Burroughs-Wellcome & Co., London, England, and New York.

PROTAN—Tannin Nucleo-Proteid, Mulford.—Protan is said to be a chemical combination of casein with tannic acid containing about 50 per cent. tannic acid.

It is made by adding a solution of tannic acid to an alkaline solution of casein, collecting and drying the precipitate. Protan is a light brown powder, tasteless, and free from astringent action on the mouth and stomach; insoluble in water or dilute acids, and does not coagulate albumen or precipitate pepsin or peptones.

When shaken with water and filtered, a colorless solution should be obtained, which should give not more than a faint trace of color with ferric chloride solution, showing absence of more than traces of free (uncombined) tannic acid.

The resistance of Protan to the action of the gastric juice may be shown by mixing 2 Gm. (dried at 100 degrees C.) with 40 Cc. 0.2 per cent. hydrochloric acid containing ten times the theoretical amount of 1 :3000 pepsin necessary to digest the proteid present, warming to 40 degrees C. for six hours, filtering off the residue, drying and weighing; 60 to 70 per cent. of the amount taken may thus be recovered.

The tannin may best be determined by difference, the casein being determined by decomposing it by the Kjeldahl-Gunning method and estimating the nitrogen.

Actions and Uses.—It is employed as an intestinal astringent in all forms of diarrhea.

Dosage.—For infants and children, 0.3 to 0.6 Gm. (5 to 10 grains) every hour; in acute catarrhal diarrhea (cholera morbus), 1 to 2 Gm. (15 to 30 grains) every one or two hours; in chronic diarrhea, 1.3 to 2 Gm. (20 to 30 grains) every hour or two hours.

Manufactured by the H. K. Mulford Co., Philadelphia. Not patented. U. S. trademark No. 38,016.

Friable Tablets Protan, 2½ grains.—Each tablet contains protan, 0.16 Gm. (2½ grains).

Friable Tablets, Protan, 5 grains.—Each tablet contains protan, 0.32 Gm. (5 grains).

Friable Tablets, Protan, 7½ grains.—Each tablet contains protan, 0.48 Gm. (7½ grains).

Protan and Opium Tablets, No. 1.—Each tablet contains opium 0.005 Gm. (1/12 grain) and protan 0.162 Gm. (2½ grains).

Protan and Opium Tablets, No. 2.—Each tablet contains opium 0.03 Gm. (½ grain) and protan 0.5 Gm. (7½ grains).

PROTARGOL—Protein Silver Salt.—Protargol is a compound of albumin and silver containing 8.3 per cent. of silver in organic combination.

According to the patent specification insoluble protein silver compounds, obtained by treating protein bodies with silver salt, are rendered soluble by treatment with a solution of albumoses.

It is a light-brown powder, soluble in twice its weight of cold water, producing a solution which is not affected by the ordinary precipitants of silver salts, such as alkalies, sulphides, chlorides, bromides, iodides, nor by heat.

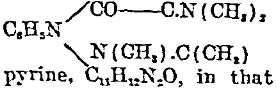
Ammonium sulphide gives a dark color to the solution without precipitation. Addition of strong hydrochloric acid produces a precipitate [illegible] soluble in a large quantity of water. A [illegible] uric acid is not colored blue by dipheny[illegible] with picric acid and picrates and with [illegible] hould not be exposed to light. It is precipitated by cocaine hydrochloride, but this is prevented by addition of boric acid.

Actions and Uses.—Protargol is claimed to be a non-irritant bactericide and antiseptic. It is said to be useful in acute and chronic gonorrhea as a non-irritant substitute for silver nitrate and in diseases of the mucous membranes of the eye, ear, nose and throat, and particularly in the treatment of conjunctivitis.

Dosage.—From 0.25 or 1 per cent. solution in acute gonorrhea, to 5 or 10 per cent. instillations in chronic cases, in cystitis and urethritis; in solutions of 1:1000 to 1:2000 as irrigations. Used also in form of bougies and tampons (5 to 10 per cent.). Its solutions in water are made by pouring on the protargol a little *cold* water, stirring into a thick paste, and gradually adding the remainder of the water under stirring; or by sprinkling the protargol on the surface of the whole of the water (cold) and setting it aside until solution occurs.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 615,970 (Dec. 13, 1898; expires 1915). U. S. trademark No. 30,882.

PYRAMIDON.—Dimethylaminoantipyrina.—Pyramidon is phenyl-dimethyl-dimethylamino-pyrazolon,



$$C_6H_5N\begin{cases}CO\text{——}C.N(CH_3)_2\\N(CH_3).C(CH_3)\end{cases} = C_{13}H_{17}N_3O,$$

differing from antipyrine, $C_{11}H_{12}N_2O$, in that a dimethylamino group, $N(CH_3)_2$, has replaced a hydrogen atom of the pyrazolon nucleus.

It is prepared by the reduction of nitroso-antipyrine to amido-antipyrine and treating this with methyl chloride or iodide.

It forms small, colorless, slightly alkaline crystals, melting at 108° C. (226.4° F.); almost tasteless; soluble in 11 parts of cold water and readily soluble in alcohol, ether and benzene. Its aqueous solution saturated at 70° C. (158° F.) *deposits oily globules of pyramidon on boiling.*

Ferric chloride colors the neutral or slightly acidulated solution of pyramidon a bluish violet color; nitrous or nitric acid produces a fugitive blue-violet color; silver nitrate produces an intense violet coloration when added to the aqueous solution, followed by the formation of a black precipitate of metallic silver, and the same color is produced by platinum chloride, by ammonium persulphate and by lead dioxide. In hydrochloric acid solution pyramidon gives a fine crystalline double salt with mercuric chloride.

Its incompatibilities are in general the same as those of antipyrine. Oxidizing agents (also acacia) often produce colored solutions.

Actions and Uses.—Pyramidon acts as an antipyretic and anodyne, like antipyrine, but is effective in smaller doses. The action, while somewhat slower at the beginning, is more lasting. It is claimed to be devoid of harmful influences on the blood, heart or kidneys. It is said to be useful, particularly in the chronic fevers of tuberculosis, as well as in the acute febrile conditions incident to typhoid fever, erysipelas and pneumonia. In the treatment of infectious fevers, it, like other *antipyretics, should be cautiously employed.* See Acetphenetidin.

Dosage.—0.3 to 0.4 Gm. (5 to 6 grains), most conveniently in the form of tablets, a single dose usually sufficing for 24 hours.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 579,412 (March 23, 1897; expires 1914).

PYRAMIDON ACID CAMPHORATE.—Pyramidon acid camphorate, $C_{13}H_{17}N_3O.C_{10}H_{16}O_4$, is an acid salt of pyramidon and camphoric acid.

It is prepared under the same conditions as the neutral salt.

It is a white, crystalline powder of acid reaction, melting (indefinitely) at 84° to 94° C. (183.2° to 201.2° F.); soluble in 20 parts of water or in 4 parts of alcohol.

It gives the characteristic reaction of pyramidon (which see) with silver nitrate. If the solution in hot water is made alkaline with caustic soda, the pyramidon may be shaken out with chloroform; if the residual aqueous liquid is then acidified with sulphuric acid the camphoric acid (melting point 186° C., 366.8° F.) may be shaken out with ether.

Actions and Uses.—The acid and neutral salts combine the antipyretic action of pyramidon with *the antihidrotic action* of camphoric acid. It is claimed that in these compounds the respective action of *the component is modified,* the antihidrotic effect of the camphoric acid being materially increased, while the toxicity of the pyramidon is diminished; but the latter statement is hypothetical. In the neutral salt the antipyretic action of the pyramidon predominates; in the acid salt the antihidrotic effect of the camphoric acid.

They are said to be especially useful in the febrile conditions of phthisis, attended by profuse sweating. See Pyramidon.

Dosage.—0.75 to 1 Gm. (12 to 15 grains), given in powders or aqueous solution.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 686,999 (Nov. 19, 1901; expires 1918).

PYRAMIDON NEUTRAL CAMPHORATE.—Pyramidon neutral camphorate $(C_{13}H_{17}N_3O)_2.C_{10}H_{16}O_4$, is a neutral salt of pyramidon and camphoric acid.

It is prepared by combining its components with the aid of suitable solvents, under exclusion of light, moisture and heat.

It is a white, crystalline powder, melting (indefinitely) at 80° to 90° C. (176° to 194° F.). It dissolves with acid reaction in 15 parts of water or 2 parts of alcohol.

It gives the characteristic reaction of pyramidon (which see) with silver nitrate. If the solution in hot water is made alkaline with caustic soda, the *pyramidon* may be shaken out with chloroform; if the residual aqueous liquid is then acidified with sulphuric acid the camphoric acid (melting point 186° C., 366.8° F.) may be shaken out with ether.

Dosage.—Neutral camphorate, 0.5 to 0.75 Gm. (8 to 12 grains) given in powders or aqueous solution.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 686,998 (Nov. 19, 1901; expires 1918).

PYRAMIDON SALICYLATE.— Pyramidon salicylate, $C_{13}H_{17}N_3O.C_7H_6O_3$, is a salt of pyramidon and salicylic acid.

It is prepared by combining its components with the aid of a suitable solvent and avoidance of exposure to light, moisture and heat

It is a white, crystalline powder, having an acid reaction and melting indefinitely at 68° to 70° C. (154.4° to 158° F.). It is soluble in 16 parts of water or 5 to 6 parts of alcohol.

The aqueous solution is colored intensely red by ferric chloride, and produces a white precipitate with silver nitrate, the solution assuming a violet color after a short time.

It is incompatible with ferric salts.

Actions and Uses.—It is antipyretic, analgesic and antiseptic, combining the activity of its components.

It is said to be useful in rheumatic and gouty affections, *neuralgia, pleuritis,* etc. See Pyramidon.

Dosage.—0.5 to 0.75 Gm. (8 to 12 grains) in powder or aqueous solution.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany *(Victor Koechl & Co.,* New York). U. S. patent No. 680,278 (Aug. 13, 1901; expires 1918).

PYROXYLIN

Pyroxylin is official in the United States Pharmacopœia. For description see the pharmacopeia or the Physicians' Manual of the Pharmacopeia and National Formulary.

CELLOIDIN.—A name applied to a preparation of the character of a purified Pyroxylin, U. S. P.

Celloidin is prepared by solution of pyroxylin in a mixture of alcohol and ether, filtration and recovering the solvent from the *filtrate. It is supplied in shreds immersed in water.*

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 299,857 *(expired).*

QUASSIN[1]—Quassine (Pharm. Française, 1908)—Quassinum—Quassin is a bitter principle found in quassia.

The alcoholic extract of Jamaica quassia wood (Quassia U. S. *P.*) is neutralized with magnesia, then acidified with tartaric acid and the alcohol distilled off. The residue is shaken up with chloroform and the solution evaporated to syrupy consistency *and dissolved in a mixture of equal parts of absolute alcohol* and ether. This solution is evaporated and the residue dissolved in as little absolute alcohol as possible, the solution covered with a layer of ether and allowed to evaporate. The crystals which form are recrystallized from alcohol. The product thus prepared consists of two bitter principles *a*-picrasmin ($C_{35}H_{46}O_{10}$) melting at 204° C. (399.2° F.) and *β*-picrasmin ($C_{36}H_{48}O_{10}$) melting at 209-212° C. (408.2° to 413.6° F.).

Quassin crystallizes in oblique rhomboidal needles with a pearly lustre. It is odorless, but has a bitter taste. Its melting point is 210° C. (410° F.) and cooling it forms an amorphous mass. It is soluble in about 400 parts of water at 15° C. (59° F.); in 30 parts alcohol (85 per cent.) and in 21 parts of cold chloroform. *It is very soluble in boiling alcohol,* in acetic acid, and very slightly soluble in ethyl and petroleum ethers. It is soluble in concentrated acids and alkalies, but not in alkaline carbonates. *Continued action of alkalies forms resins (Pharm. Française,* 1908). It is dextrorotatory in its chloroform solution; 4.22 gm. in 100 Cc. chloroform rotating the plane of polarized light to the right with a *specific* rotation of plus 38° 8′. Solutions of quassin are neutral.

It dissolves to a colorless solution in concentrated sulphuric acid, which becomes red on the addition of sugar. (Pharm. Française, 1908).

QUININE DERIVATIVES

ARISTOCHIN — Diquinine carbonic Ester.—Aristoquin—*Carbonyl Quinine.* — *Aristochin* is *quinine* carbonate, $CO(C_{20}H_{23}N_2O_2)_2 = C_{41}H_{46}N_4O_5$, the neutral carbonic acid ester of quinine.

It is prepared according to the patents by acting on quinin dissolved in pyridin or chloroform with carbonyl chloride or by heating together quinine and phenol carbonate in the *proportion* of one molecule of the latter to two molecules of the former.

It forms a white, absolutely tasteless powder, melting at 189° C. *(372.2°* F.) insoluble in water, difficultly soluble in alcohol, more soluble in warm alcohol and chloroform, very sparingly soluble in ether. It is capable of combining with one and two molecules of *hydrochloric acid forming soluble* salts. It is gradually decomposed by acids with liberation of quinine, thus acquiring a bitter taste; hence it is incompatible with acids.

It should be free from bitter taste. As it is decomposed by acids and alkalies with the formation of quinine, it should respond to tests for quinine after such treatment.

Actions and Uses.—The same as those of quinine, but, since it is only slowly acted on by acids, it is said not to produce disturbance of the stomach *and to be much freer from* tendency to production of cinchonism.

Dosage.—The same as that of *quinine,* in powder, mixed with milk sugar, dry on the tongue or suspended in liquids.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). German patents No. 105,666, 134,307 and 137,308. U. S. patent No. 625,075 *(May* 16, 1899; expires 1916).

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[1] Quassin (amorphous) is not identical with the above and should not be confounded with it.

CHINAPHENIN—Phenetidin Quinine Carbonic Acid Ester.—Chinaphenin is phenetidin quinine carbonate, CO(NH. $C_6H_4OC_2H_5$) ($C_{20}H_{23}N_2O_2=C_{29}H_{33}N_3O_4$, the carbonic acid ester of phenetidin and quinine.

It is prepared by the action of quinin on p-ethoxyphenyl carbamic acid chloride.

It is a white, odorless and tasteless powder, difficultly soluble in water, but readily soluble in alcohol, ether, chloroform and benzene. Acids dissolve it with the formation of soluble salts.

It gives the thalleioquin reaction for quinine salts, but forms a yellow herapathite.

It is decomposed by acids with the liberation of quinine.

Actions and Uses.—Chinaphenin combines the antiperiodic properties of quinine with the analgesic power of acetphenetidin (phenacetin), with the advantage of tastelessness and asserted freedom from symptoms of cinchonism. It has been recommended in febrile diseases, especially la grippe; in spasmodic conditions, such as whooping-cough; in certain forms of malaria and in neuralgia.

Dosage.—Adult: 0.3 to 0.6 Gm. (5 to 10 grains) ordinarily, or 1.5 to 2 Gm. (22 to 30 grains), given in two doses as an antipyretic in neuralgia and malaria; in whooping-cough, 0.13 to 0.3 Gm. (2 to 5 grains), according to age.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 637,839 (Nov. 28, 1899; expires 1916): Vereinigte Chininfabriken. Zimmer & Co., Frankfort a. M., Germany. German patent No. 109,259.

EUQUININE—Quininæ Æthylcarbonas.—Quinine Ethyl Carbonate—Euchinin.—Euquinine is quinine ethyl carbonate, $C_2H_5O.CO.OC_{20}H_{23}N_2O=C_{23}H_{28}O_4N_2$, the quinine ester of ethyl Carbonic acid ester.

It is prepared by the action of chlorocarbonic ethyl ester on quinine, $C_2H_5O.COCl + C_{20}H_{24}N_2O_2=HCl + C_2H_5O.COO.C_{20}H_{23}N_2O$.

It is a light, fleecy conglomeration of delicate, white needles, melting at 95° C. (203° F.) and practically tasteless. It is sparingly soluble in water, but readily soluble in alcohol, ether and chloroform. It is slightly alkaline in reaction, forming well crystallizable, bitter salts with acids. It produces a tasteless tannate.

Its solutions in acidulated water have the characteristic bitter taste of quinine. On heating a mixture of 0.2 Gm. of euquinine, 3 Cc. of solution of sodium hydroxide and a little iodine, the odor of iodoform is manifested. Like quinine its solution in dilute sulphuric acid exhibits strong, blue fluorescence, and it gives also the so-called thalleioquin reaction, but not the herapathite reaction. A solution in nitric acid should not change on addition of either silver nitrate or barium chloride.

It should leave no residue on combustion.

It is incompatible with acids which will develop the bitter quinine taste.

Actions and Uses.—Euquinine is claimed to have the same action as quinine, with the advantage of being tasteless, owing to its insolubility in water and alkaline media.

Dosage.—The same as quinine.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany (Merck & Co., New York). U. S. patent No. 585,068 (June 22, 1897; expires 1914). U. S. trademarks Nos. 640,977 and 701,523.

QUININE LYGOSINATE—Quininæ Lygosinas.—Quinine lygosinate. $CO(CH:CH.C_6H_4.C_{20}H_{24}N_2O_2)_2=C_{57}H_{60}N_4O_5$, is a quinine compound of dioxy-dibenzal-acetone.

It is prepared by the reaction of quinine hydrochloride with sodium lygosinate.

Quinine lygosinate is a fine, orange yellow, amorphous powder, melting at 114° C. (237.2° F.), having a faintly aromatic odor and a bitter taste, which is gradually developed on account of its sparing solubility in water. It is slightly soluble in water, soluble in 6 parts of alcohol, in 20 parts of hot oil and readily soluble in chloroform and benzene. It is decomposed by acids and alkalies. It contains 70.8 per cent. of quinine.

Burned on platinum foil, quinine lygosinate develops the odor of bitter almonds and leaves no residue. Its alcoholic solution dyes cotton gauze a bright yellow color, which becomes red-brown on drying.

If 1 Gm. quinine lygosinate be shaken with 20 Gm. of 20 per cent. sodium hydroxide solution and extracted twice with 10 Gm. of ether, the quinine remaining after evaporation of the ether should not weigh less than 0.7 Gm. If the alkaline solution thus obtained be acidified, lygosin separates as a thick yellow precipitate.

It is incompatible with acids and alkalies.

Actions and Uses.—It is stated that this preparation is capable of preventing completely the development of cultures of staphylococcus. Given to rabbits by mouth in doses of 1 Gm. per kilo of the body weight it is said to be entirely harmless. It is claimed to be a styptic useful in parenchymatous hemorrhages and free from unfavorable side effects, such as cauterization of the wound surfaces.

Dosage.—It is employed as a dusting powder, in bandages, gauzes, suppositories, in the form of court plaster and in glycerin suspensions.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany. (C. Bischoff & Co., New York.)

QUININE AND UREA HYDROCHLORIDE.—Quininæ et Ureae Hydrochloridum.—Chininum bihydrochloricum Carbamidum. — Quinine and urea hydrochloride, $C_{20}H_{24}N_2O_2$.-HCl + $CH_4N_2O.HCl + 5H_2O$. is a compound of quinine hydrochloride and urea hydrochloride containing approximately 60 per cent. of anhydrous quinine.

Quinin and urea hydrochloride is prepared by dissolving 400 parts quinin hydrochloride in 300 parts of dilute hydrochloric acid, sp. gr. 1.061, mixing the solution with 60 to 61 parts of pure urea $CO(NH_2)_2$ warming the mixture until dissolved, filtering it through glass wool and setting the filtrate aside for crystallization. After twenty-four hours the crystals are brought on a filter, drained, washed with very cold distilled water, spread on flat plates and dried at room temperature. The mother liquor is evaporated and again set aside for crystallization. The second mother liquor which is colored brown is exposed in a dish to spontaneous evaporation, during which all of the double salt of quinine slowly crystallizes out and may be separated.

The hydrochloride of quinine and urea crystallizes from hot solutions in hard white interlaced four sided prisms. On spontaneous evaporation of a concentrated solution very large transparent prisms are formed. The salt dissolves at ordinary temperature in its own weight of water forming a somewhat viscid straw colored liquid, not altered by exposure to light. During its solution a marked lowering of temperature occurs.

It is not hygroscopic and is unalterable in the air excepting when warmed, the crystals lose their transparency and become yellowish. They fuse at from 70° to 75° C. (158° to 167° F.) with the loss of 10 per cent. of water forming a yellowish liquid which congeals on cooling to a yellow mass. If this mass is allowed to stand in the air it takes up after a few days the whole amount of water expelled and becomes again white. If the melted salt is dissolved in water it may be completely recovered in a crystalline form. It is also soluble in alcohol and from this solution a salt of somewhat variable composition is precipitated by ether.

It is soluble in about 800 parts of chloroform.

Its aqueous solutions are of a strong acid reaction.

A solution of the salt in water 1 to 20 shows no fluorescence, but if one drop of this solution is added to 10 Cc. of distilled water in a test tube a vivid blue fluorescence is developed.

On drying the salt at 125 C. to constant weight and cooling in a desiccator, it should not lose more than 16.5 per cent. of its weight (corresponding to five molecules of water of crystallization).

On ignition the pure salt is slowly consumed, leaving no residue.

Ammonia water, alkaline hydroxides or alkali carbonates throw down from the aqueous solution of quinine and urea hydrochloride a white precipitate of alkaloidal quinine, which when carefully washed with cold distilled water until free from chlorides and dried at a low temperature, should conform to the reactions and tests given in the United States Phramacopeia under quinine. One gramme dissolved in 2 Cc. of distilled water and well shaken in a stoppered test tube with 6 Cc. of ether and 2 Cc. of 10 per cent. ammonia water should be dissolved completely and no crystals should separate out from the ethereal solution on standing for six hours. If the ethereal stratum is removed to a tared beaker and the contents of the test tube washed successively with three portions of 5 Cc. each of ether and these ether washings also added to the tared beaker, the alkaloidal quinine remaining after evaporating off the ether, dried at 125 C. to constant weight, should weigh not less than 0.592 Gm.

If 2 Gm. of the salt be dissolved in a test tube in 4 Cc. of distilled water, the solution cooled and 4 Cc. of nitric acid U. S. P. (free from nitrous acid) be added, the solution quickly cooled again in ice water and the cold mixture set aside at a low temperature, separation of crystals will commence after a few minutes and crystallization will be completed after the solution has stood in a cold place over night. The crystals may be separated by the use of a small glass funnel provided with a pellet of glass wool. The test tube should be washed with three portions of 2 Cc. each of cold diluted nitric acid 1 and 1 and the acid carefully poured over the crystals in the funnel, drop by drop, to remove all traces of quinin. The remaining crystals should consist of urea nitrate. This is demonstrated by taking 3 Cc. of water, heating in the test tube in which the crystals have been crystallized, and after carefully draining off the acid which may be held back by the stem of the funnel, pouring the hot water slowly on the crystals in the funnels and repeating with another 2 Cc. of hot water. The resulting well-mixed solution is divided into two equal parts in two test tubes and cooled. To the first is added from a pipette 10 drops of solution of mercuric nitrate, U. S. P., and then, gradually, normal solution of sodium hydroxide until only a slightly acid reaction is obtained, when a copious white precipitate should result.

The second part of the filtrate is made strongly alkaline by the use of a solution of sodium hydroxide, 1 in 4, and to the resulting clear liquid is added 2 Cc. of a strong solution of sodium hypochlorite. The mixture is warmed to about 40 C., when a development of gas will take place at once.

Actions and Uses.—Quinine and urea hydrochloride has the actions of quinine. It is non-irritating when injected hypodermically. Recent investigations have shown that when injected hypodermically or when applied locally to mucous membranes it exerts an anesthetic action similar to that of cocaine. It is reported that the anesthesia is in some cases prolonged for several days.

Quinine and urea hydrochloride is said to be especially useful in the treatment of malaria by hypodermic injections. It has also been applied as a substitute for cocaine in the production of local anesthesia for operations.

Dosage.—The same as Quinine. For the production of local anesthesia injections of a solution of from ¼ to 1 per cent. strength are used. The ¼ per cent. solution is said to be free from the risk of producing fibrous indurations, which sometimes occurs with the stronger solution. For application to mucous membranes solutions varying in strength from 10 to 20 per cent. should be used.

SALOQUININE—Quinine Salicylic Ester.—Salochinin—Salicylquinine.—Saloquinine is quinine salicylate, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) = C_{27}H_{25}O_4N_2$, the salicylic acid ester of quinine, containing 73.1 per cent. of quinine.

According to the patent specifications it is obtained by heating a mixture of phenyl salicylate (salol) with anhydrous quinine to 170° to 190° C. (338° to 374° F.) in a vacuum, whereby quinine salicylic acid ester and phenol are formed. The phenol set free is removed by distillation and the residue washed with dilute acetic acid to remove unchanged quinine.

It is a white, crystalline powder, melting at 138° C. (280.4° F.), perfectly tasteless and odorless. It is insoluble in water, soluble in acidulated water and moderately soluble in alcohol and in ether. It forms neutral salts which are tasteless, and acid salts.

Its acid solutions are precipitated by alkalies and the usual alkaloidal reagents. The filtrate obtained after shaking saloquinine with water, does not give a violet color with ferric chloride (absence of free salicylic acid).

It is incompatible with acids.

Actions and Uses.—It is a tasteless substitute for quinine and salicylic acid.

Dosage.—0.5 to 2 Gm. (8 to 30 grains).

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York). U. S. patent No. 678,401 (July 16, 1901; expires 1918). U. S. trademark No. 37,373 (salochinin), No. 37,374 (saloquinine).

SALOQUININE SALICYLATE. — Saloquinine salicylate $C_6H_4.OH.COO(C_{20}H_{23}N_2O).C_6H_4OH.COOH = C_{34}H_{34}N_2O_3$, is the salicylate of the salicylic acid ester of quinine.

It is prepared by the addition of salicylic acid to a hot alcoholic solution of salicylic acid ester of quinine (see saloquinine) and collection of the crystals which separate out on cooling.

It is a white, tasteless powder, melting at 182° to 183° C. (359.6° to 361.4° F.), sparingly soluble in water, soluble in benzene, chloroform and hot alcohol.

It is incompatible with alkaline liquids.

Actions and Uses.—It has been recommended in acute rheumatism, neuralgia, tabes, gonorrheal inflammations, etc.

Dosage.—1 Gm. (15 grains).

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 698,079 (April 22, 1902; expires 1919).

RED GUM—Eucalypti Gummi.—Eucalyptus gum. Eucalyptus Kino.

Red gum is an exudation from the bark of Eucalyptus rostrata, Schlecht, and other species of Eucalyptus.

Red gum occurs in small, dark reddish brown, opaque and more or less dusty pieces which yield a pale red powder. It is usually collected from artificial incisions. When chewed it is tough, and colors the saliva red. Water dissolves 80-90 per cent. Its chief constituent is tannic acid, to the extent of 47 per cent.

Action and Uses.—Red gum is an active astringent. It is used as an astringent in sore throat, diarrhea and in catarrhal affections of various mucous membranes. Largely used in the form of lozenges where an astringent is needed in throat affections.

Dosage.—0.1 to 0.3 Gm. (2 to 5 grains).

SABROMIN — Dibromebehenate of Calcium. — Sabromin, $(C_{21}H_{41}Br_2COO)_2Ca = C_{44}H_{82}O_4Br_4Ca$, is the calcium salt of dibrombehenic acid.

It is prepared from erucic acid by the addition of bromine and transformation of the diobrombehenic acid thus obtained into the calcium salt.

Sabromin is a colorless, odorless and tasteless powder claimed to contain about 29 per cent. bromin and about 3.8 per cent. calcium. It is insoluble in water and alcohol, soluble in ether, acetone, benzol, ligroin and tetrachloride of carbon. On heating on platinum foil it is decomposed with liberation of bromine.

Tests: Sabromin is recognized by its solubilities and the liberation of bromine on heating.

Action and Uses.—Sabromin is converted in the stomach into dibrombehenic acid, a substance which is free from any action on that organ, but which is absorbed from the intestine. Its effect is less rapid than that of the bromides, but more prolonged. It is said to be devoid of the disadvantages of the bromides, such as their unpleasant taste, irritating action on the stomach, and systemic by-effects.

Sabromin is indicated in the same class of cases in which the bromides are useful.

Dosage.—The dose is about the same as that of potassium bromide.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 848,230 (March 26, 1907; expires 1924).

Sabromin Tablets, 8 grains.—Each tablet contains sabromin 0.5 Gm. (8 grains).

SAJODIN—Monoiodobehenate of Calcium.—Sajodin, $(C_{21}H_{42}ICOO)_2Ca = C_{44}H_{84}O_4I_2Ca$, is the calcium salt of monoiodobehenic acid.

It is prepared from erucic acid, $C_{22}H_{42}O_2$, by addition of hydrogen iodide, forming monoiodobehenic acid, $C_{22}H_{43}O_2I$. This is converted into the calcium salt.

Sajodin is a colorless, odorless and tasteless powder, insoluble in water. On heating it generates an abundance of iodine vapor; on exposure to light the superficial portion becomes yellow without material decomposition.

It should contain 26 per cent. of iodine and 4.1 per cent. of calcium.

Actions and Uses.—Although containing a smaller quantity of iodine than potassium iodide, sajodin is claimed to be equally efficient. It is said to have been proven exceptionally free from the unpleasant and deleterious by-effects of the iodides.

It is used for the same purposes as potassium iodide.

Dosage.—1 to 3 Gm. (15 to 45 grains) daily.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, and Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 848,230 (March 26, 1907; expires 1924). Trademark pending.

Sajodin Tablets, 8 grains. Each tablet contains sajodin 0.52 Gm. (8 grains).

SALOPHEN — Acetylparamidophenol Salicylate.—Acetparamidosalol. — Salophen is 1,4-acetamino-phenyl salicylate, $(C_6H_4.OH.COO).C_6H_4NH.(CH.CO)$, the salicylic acid ester of 1,4-acetaminophenol, $C_6H_4(NHCH_3CO)(OH)$.

It is made by preparing paranitrophenol salicylate by a process similar to that of preparing phenyl salicylate (salol); converting this by means of reducing agents into paramidophenol salicylate, and this into acetylparamidophenol salicylate by the action of acetic acid. This crude salophen so obtained is then purified by crystallization from benzene or alcohol.

It forms small, white, crystalline leaflets or powder, odorless and tasteless, melting at 187° to 188° C. (368.6° to 370.4° F.), and containing 51 per cent. of salicylic acid. It is almost insoluble in cold water, more soluble in warm water, but freely soluble in watery solutions of the alkalies and in alcohol, ether and benzene, but not in petroleum benzin.

If its alkaline solution be boiled it gradually becomes blue; on continuing the boiling the color is discharged, but is again produced on cooling and exposure to air. On addition of ferric chloride to the alkaline solution the violet color characteristic of salicylic acid is produced, but a simple aqueous solution of salophen does not react with ferric chloride and should not be changed by silver nitrate. It forms a colorless solution with concentrated sulphuric acid.

It is incompatible with alkalies, which decompose it.

Actions and Uses.—The actions of salophen resemble those of phenyl salicylate (salol). It is not changed in the stomach, but is broken up in the intestine, liberating salicylic acid and acetylparamidophenol, which, unlike phenol, is not toxic. It acts as an antirheumatic, antipyretic, antiseptic and analgesic. It is said to be useful in rheumatism, gout, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. Externally it has been applied in psoriasis and other itching skin diseases.

Dosage.—0.3 to 1 Gm. (5 to 15 grains), in powder, wafers or capsules. Externally in 10 per cent. ointment.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 492,868 (expired). U. S. trademark 20,759.

SANGUINARINE NITRATE —Sanguinarinæ Nitras.—Sanguinarine nitrate is the nitrate $(C_{20}H_{15}NO_4.HNO_3)$ of the alkaloid sanguinarine, obtained from sanguinaria canadensis and other plants.

Sanguinarine nitrate occurs in orange-yellow crystalline needles or deep-orange colored powder. It is soluble in water and in alcohol.

Action and Uses.—Sanguinarine is a violent poison producing in mammals vomiting, purging, convulsions with loss of reflex activity and cardiac depression. The blood pressure is said to be raised by small doses.

The principal use of sanguinarine nitrate is as a stimulant expectorant in chronic bronchitis and in the later stages of acute bronchitis. It is said to be an emmenagogue and may be used in functional amenorrhea.

Dosage.—0.004 to 0.06 Gm. (1/16 to 1 grain); as an expectorant 0.004 to 0.008 Gm. (1/16 to ⅛ grain); as an emetic 0.015 to 0.06 gm (¼ to 1 grain); average dose 0.015 Gm. (¼ grain) to be given with caution.

SANTYL—Santalolis Salicylas.—Salicylic Ester of Santalol.—Santyl is santalyl salicylate, $C_6H_4OH.COO(C_{15}H_{23}) = C_{22}H_{28}O_3$, the salicylic acid ester of santalol.

According to the German patent the neutral esters of sandalwood oil are produced by heating the oil with the respective acid anhydrides and subsequent purification of the product.

Santyl is a yellowish oil with only a faint balsamic odor and taste; specific gravity, 1.07 at 15° C. (59° F.); it boils under 20 mm. pressure at 121° C. (250° F.) to 126.6° C. (260° F.) with partial decomposition; insoluble in water, but soluble in about 10 parts of alcohol.

It is incompatible with alkalies and with the usual incompatibles of sandalwood oil and of salicylates.

Santyl should possess the physical constants given above. On saponification with alcoholic sodium hydroxide it should yield approximately 40 per cent. of salicylic acid and 60 per cent. of santalol.

Actions and Uses.—It is said that santyl passes the stomach unchanged, but is slowly split up in the intestines into its constituents, santalol and salicylic acid. Santyl is claimed to have the same actions as sandalwood oil, except that because of the slow liberation of santalol, it produces no irritation of the gastrointestinal tract nor of the kidneys and urinary passages, nor any unpleasant odor or eructations.

It is claimed to be useful like santal oil for gonorrheal urethritis.

Dosage.—1.5 Cc. (24 minims) usually given in three capsules of 0.5 Cc. (8 minims) each, three times a day.

Manufactured by Knoll & Co., Ludwigshafen, a. R., Germany (Knoll & Co., New York). German patent No. 173,240. U. S. patent No. 862,858 (Aug. 6, 1907; expires 1924). U. S. trademark No. 61,255.

SECACORNIN.—Ergotin Roche.—Secacornin is a solution of the active principles of ergot in a menstruum consisting of distilled water, glycerin and 7.5 per cent. of alcohol. 1 Cc. of secacornin corresponds to 4 Gm. of ergot U. S. P. and is said to be standardized according to the method of Kehrer (Arch. f. exp. Path. u. Pharm., vol. lviii).

Secacornin is prepared from ergot by removing fat by means of benzin or similar solvent and exhausting by percolation with diluted alcohol. The total percolate is then deprived of its alcohol by distillation in vacuo. The resinous mass which separates after cooling is then carefully drained off and the clear filtrate having been evaporated to the consistency of an extract is mixed with the general vehicle.

Secacornin is a dark brown solution, said to be sterile. It is claimed that it does not deteriorate on keeping.

Secacornin responds to the following identity test: 1.6 Cc. secacornin is mixed with 3.0 Cc. distilled water, and 5 drops of 10 per cent. ammonia water, and shaken out in a separatory funnel with 20.0 Cc. of ether. After complete separation of the two liquids, the aqueous solution is allowed to flow off, the remaining ether washed with 2.0 Cc. distilled water, and the wash-water likewise carefully separated. After this the ethereal solution is filtered into an Erlenmeyer flask, and traces of water removed by the use of as much anhydrous sodium sulphate as can be held on the point of a knife. Following this it is filtered into a small glass dish and cautiously evaporated.

The residue is then dissolved in from 1 to 1½ Cc. ferric-chloride-acetic acid (1 drop of Liq. ferri chloridi with 200 Cc. acetic acid). To this solution is added with a pipette, cautiously and without mixing, in order to form an understratum, 3.0 Cc. pure concentrated sulphuric acid. At the point of contact of the two liquids a characteristic blue to violet ring forms after a time.

Action and Uses.—The same as ergot.

Dosage.—0.5 Cc. (8 minims) are equivalent to 2 Cc. (30 minims) of fluid extract of ergot U. S. P. It may be given by intramuscular injection in doses of 0.5 to 1 Cc. (8 to 15 minims).

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). Not patented. U. S. trademark No. 58,830.

SERUMS AND VACCINES

The vaccines, viruses and serums constitute one of the most important groups of drugs with which the physician has to deal. Some preparations of this group are specific cures for certain diseases; others are invaluable in prophylaxis and diagnosis. The great importance of exercising some degree of governmental control over these products was recognized by the passage by Congress in 1902, of a law entitled "An Act to Regulate the Sale of Viruses, Serums, Toxins and Analogous Products in the District of Columbia, to Regulate Interstate Traffic in Said Articles, and for Other Purposes." The law provides for the licensing of manufacturers who make these products. In order to obtain such a license it is necessary for an establishment desiring it to request the Surgeon-General of the U. S. Public Health and Marine-Hospital Service to have an inspection made of its laboratories, methods, products, etc. This inspection is made by an officer of that service, and consists in a careful examination of the stables, laboratory facilities, methods, animals, collection of the serum, standardization, and tests for potency, purity and amount of preservation. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the Public Health and Marine-Hospital Service. The inspection of the laboratories is repeated at least once a year and if unsanitary conditions are found, or if the products are not what they are claimed, the license is suspended.

Antidiphtheric and antitetanic serums are required to conform strictly to the standards which have been established by the United States Government. There being no established standard for the various other products they are not examined for their therapeutic value in the laboratory, but are tested for the amount of preservative and freedom from bacterial and toxic contaminations. Vaccine virus is examined particularly for its freedom from pathogenic bacteria, especially tetanus, and also for its potency.

The following pages contain a description of the preparations which may be legally sold in interstate commerce in the United States and which have not been found to conflict with the rules of the Council:

Serums and Viruses

SERUM ANTIDIPHTHERICUM AND ANTIDIPHTHERIC GLOBULINS.—Antidiphtheric Serum or Diphtheria Antitoxin is an official preparation; for description see the U. S. Pharmacopeia, 8th decennial revision. The diphtheria antitoxin sold in interstate commerce in the United States and in the District of Columbia is required to conform to the standard established by the United States Public Health and Marine-Hospital Service. Some manufacturers mix serums of different strengths so as to secure a preparation containing approximately a definite number of units per c.c. Most of the firms also market a concentrated diphtheria antitoxin or antidiphtheric globulins prepared by the removal, by precipitation with neutral salts, of most of the constituents of the serum except that fraction of the globulins bearing antitoxic potency.

Inasmuch as the ordinary (not concentrated) serum antidiphthericum is contained in the U. S. P., it is desirable that the term "U. S. P." be used in connection with this product (and only with this one) in order to avoid confusion with the globulin preparations.

The French, German and Spanish Pharmacopeias recognize both liquid and desiccated preparations.

H. M. Alexander & Co., Marietta, Pa.

Diphtheria Antitoxin. Only the antidiphtheric globulin is marketed; the antidiphtheric serum is concentrated and refined in accordance with recent improvements of the Gibson method. Marketed in syringes containing from 500 to 5,000 units.

Burroughs, Wellcome & Co., London, England, and New York City.

Diphtheria Antitoxin Serum. Serums of different values from a number of horses are mixed to yield a definite value (from 450 to 500 units per Cc.), also a high potency serum, 1 Cc. of which contains 1,000 units. Trikresol (0.3 per cent.) is added as a preservative. Marketed in hermetically-sealed vials containing 1,000 to 4,000 (Ehrlich-Behring) units; also a high potency serum containing from 1,000 to 10,000 units.

Cutter Laboratory, Berkeley, Cal.

Diphtheria Antitoxin. Marketed in syringes containing 4,000 units; also in bulbs. Diphtheria antitoxin globulin marketed in syringes containing 1,000 units.

Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Diphtheria Antitoxin "Behring;" imported into the United States only upon special order.

Department of Health, City of New York.

Refined and Concentrated Diphtheria Antitoxin (Globulin). The preparation is a solution of the globulins of the blood which are soluble in a saturated sodium chloride solution; this contains most of the antitoxin. Preserved with chloroform. Marketed in syringes containing from 2,000 to 5,000 units, each Cc. containing 800 to 1,500 units. Also in bulk.

Wm. R. Hubbert, Detroit, Mich.

Diphtheric Antitoxin. Marketed only in bulk (usually from 1 to 10 liters).

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Diphtheria Antitoxin. Only antidiphtheric globulin is sold; this is marketed in syringes containing from 500 to 10,000 units each; also in vials containing from 1,000 to 5,000 units each. The latter are prepared more particularly for the use of Boards of Health.

Memorial Institute for Infectious Diseases, Chicago.

Antidiphtheritic Serum. Most of the antitoxin prepared is concentrated. Marketed in packages of from 1,000 to 5,000 units each, both in syringes ready for use and in bottles.

H. K. Mulford Co., Philadelphia.

Diphtheria Antitoxin, Concentrated (globulin). Prepared from serum antidiphthericum by the removal, by precipitation at 33⅓ per cent. saturation with ammonium sulphate, of the serum albumins *and globulins. The product consists essentially of a soluble* serum globulin freed from inorganic salts by dialysis and redissolved in physiological salt solution. Preserved with not more than ¼ per cent. trikresol or not more than 1/10 to 1 per cent. chloroform. Marketed *in syringes containing from 1,000 to 5,000 units.*

National Vaccine and Antitoxin Institute, Washington, D. C.

Diphtheria Antitoxin, Concentrated; prepared according to Gibson's method. Preserved with chloroform. Marketed in syringes containing from 500 to 6,000 units.

Parke, Davis & Co., Detroit, Mich.

Antidiphtheric Serum, U. S. P.; preserved with 0.4 per cent. trikresol; marketed in piston syringe containers of from 500 to 5,000 units each.

Antidiphtheric Globulins. Marketed as above.

Antidiphtheric Globulins (dry). Marketed in packages of 3,000 units each. The dry powder is readily soluble in water and will keep indefinitely.

Frederick Stearns & Co., Detroit, Mich.

Diphtheric Antitoxin, U. S. P. Preserved with 0.4 per cent. trikresol. Marketed in syringe containers holding from 1,000 to 4,000 units.

Concentrated Diphtheric Antitoxin. Prepared by the Gibson process; preserved with chloroform (2.4 minims per fluid ounce). Marketed as above; also in syringes containing 5,000 units.

ANTIDYSENTERIC SERUM.—

H. K. Mulford Co., Philadelphia, Pa.

Antidysenteric Serum. The blood serum of horses immunized against the Shiga bacillus. Recommended in dysentery and summer diarrheas where the bacillus of Shiga is an etiologic factor. Marketed in syringes containing 10 Cc. Dose 10 to 40 Cc. every *four to eight hours;* to be injected hypodermically.

ANTIGONOCOCCIC SERUM.—Favorable results have been reported from the use of antigonococcic serum in the treatment of chronic complications of gonorrhea involving serous cavities, especially the joints. The results in the case of the chronic stages and sequels of gonorrhea involving the genitourinary tract seem to be less favorable while it seems to have still less value in acute gonorrheal affections.

Parke, Davis & Co., Detroit, Mich.

Antigonococcic Serum, prepared from the blood of rams immunized against both dead and living cultures of virulent gonococci according to the method of Rogers and Torrey[1]. Marketed in bulbs

Dosage. Two Cc. subcutaneously, to be repeated in 1 to 4 days.

ANTIMENINGOCOCCUS SERUM.—

Farbwerke, vorm. Meister, Lucius und Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York..

Meningococcus Serum "Hoechst." A serum prepared by the immunization of horses with virulent cultures of diplococcus intracellularis or its products *according to* Ruppel's method. Recommended as a *diagnostic agent for* distinguishing (by the agglutination test) the meningococcus from other diplococci and as a prophylactic and curative agent. It is injected subcutaneously or intralumbarly or in the dry form may be used as a dusting powder applied to the nasopharyngeal space or tonsils. Marketed in powder form mixed with 49.5 per cent. milk sugar and 0.5 per *cent. alumnol, for use as a dusting powder;* also in the dried form to be dissolved in 10 parts of water and injected subcutaneously or intralumbarly; also in the liquid form, preserved with 0.5 per cent. phenol (for agglutination tests).

Dose. 2.5 Gm. of the dried serum, dissolved in 25 Cc. water, subcutaneously to be followed, after lumbar puncture, by 10 *to* 15 Cc. or more, intralumbarly. In severe cases much larger amounts are recommended. 1 Gm. as a protective dose.

H. K. Mulford Co., Philadelphia.

Antimeningitis Serum. A serum prepared from the blood of *horses immunized to the meningococcus of* Weichselbaum (Diplococcus intracellularis), according to the method of Flexner (inoculation of autolyzed cultures followed by living organisms).

It is useful for the treatment of epidemic cerebrospinal meningitis, due to the meningococcus.

Dose. 15 to 30 Cc. (4 to 8 fluidrams) *given* by intraspinal injection. For young infants, 10 Cc. (2½ fluidrams). The serum is marketed in aseptic glass syringes with sterilized needle.

ANTIPNEUMOCOCCUS SERUM.—Antipneumococcus serum is the blood serum of horses immunized against pneumococci. Frequently both dead and living pneumococci are used.

Use.—It has been said *to be useful in the treatment of pneumonia* when injected subcutaneously. Hektoen, Weaver and Tunnicliff have *recently* examined the serums of this class found on the American market. They summarize their views as follows: "In the *antipneumococcus serums it was* impossible to demonstrate antibodies for pneumococci by any method employed."

"It is our belief that the claims for the usefulness of anti*streptococcus and antipneumococcus serums rest on* impressions from results in clinical cases in man, and have in most cases no foundation whatsoever in experimental tests."

H. K. Mulford Co., Philadelphia.

Antipneumococcic Serum, stated to be prepared by immunizing horses with both *dead and living pneumococci.* Marketed in syringes containing 20 Cc. Dose: 20 to 100 Cc.

Frederick Stearns & Co., Detroit, Mich.

Pneumolytic Serum, stated to be a composite polyvalent serum prepared by injecting horses with virulent pneumococci from various sources. The horses are first immunized with diphtheria toxin. *Marketed in syringes containing 20 Cc. Dose:* 10 to 20 Cc., to be repeated in 12 to 24 hours.

ANTISTAPHYLOCOCCUS SERUM.—

Burroughs, Wellcome & Co., London, England, and New York.

Antistaphylococcus Serum is stated to be obtained from horses injected with killed cultures of staphylococcus pyogenes aureus, albus and citreus. Preserved with trikresol. Marketed in vials containing 25 to 50 Cc. Recommended in the treatment of various staphylococcus infections.

ANTISTREPTOCOCCUS SERUM.—Antistreptococcus serums are prepared by immunizing horses with virulent cultures of streptococci. Most manufacturers employ several strains of streptococci, thus obtaining polyvalent serums. In some cases humanized strains of streptococci are used; in others, cultures, the virulence of which has been much increased by passage through animals. In a few cases both human and animal strains are employed. Some manufacturers employ horses immunized against diphtheria, making the doubtful claim that such serum is especially active in stimulating leucocytosis and phagocytosis.

Actions and Uses.—Antistreptococcus serum has been claimed to be useful in the *treatment* of streptococcus infections such as erysipelas, scarlet fever, puerperal septicemia, tuberculosis *(mixed infection), etc. It has* also been used as a prophylactic prior to surgical operations, after labor, in scarlet fever epidemics, etc. Its value is doubtful.

Hektoen, Weaver and Tunnicliff recently examined the preparations found on the American market; in a preliminary report (1) they state: "Streptococcus opsonins could not be demonstrated in any of the serums tested, and activation by fresh serums was not accomplished to any significant degree. When *they* were *injected into rabbits,* increase in streptococcus opsonins could not be demonstrated in the animals' serums in any notable degree, except in some instances. Attempts to obtain protective and curative effects from the injection of antistreptococcus serums in rabbits, guinea pigs, and in a more limited scale in mice, met failure. The serums often seemed to reduce the natural resistance and to hasten death."

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[1] The Journal A. M. A., Sept. 14, 1907, xlix, 918.

containing 2 Cc. each.

"It is our belief that the claims for the usefulness of antistreptococcus and antipneumococcus serums rest on impressions from results in clinical cases in man, and have in most cases no foundation whatsoever in experimental tests."

Antistreptococcus serum (liquid and desiccated) is recognized by the French pharmacopeia.

Burroughs, Wellcome & Co., London, England, and New York.

Polyvalent Antistreptococcus Serum is stated to be obtained from horses injected with killed cultures of a number of strains of cases of erysipelas, scarlet fever, puerperal fever, rheumatism, septicemia, angina, pneumonia and ulcerative endocarditis.

Antistreptococcus Serum (Erysipelas) is stated to be obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of erysipelas.

Antistreptococcus Serum (Rheumatism) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of rheumatism.

Antistreptococcus Serum (Scarlatina) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of scarlet fever.

Antistreptococcus Serum (Puerperal Fever) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of puerperal fever.

All of the above are prepared with trikresol and are marketed in hermetically-sealed vials containing in most cases 25 to 50 Cc.

Cutter Laboratory, Berkeley, Cal.

Polyvalent Streptococcic Serum, stated to be prepared by the injection of many strains of living humanized cultures of streptococci into horses immunized with diphtheria toxin. Marketed in piston syringe containers, each containing 10 Cc. of serum.

Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany. (Schering & Glatz, New York.)

Aronson's Antistreptococcus Serum, stated to be a polyvalent serum obtained by inoculating horses with streptococci the virulence of which has been highly exalted by animal passage and with various humanized strains of streptococci. Preserved with 0.4 per cent. trikresol. Dose: 20 to 100 Cc., according to the severity of the case and the age of the patient.

Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.

Antistreptococcic Serum, Hoechst, stated to be a polyvalent serum, prepared by immunizing horses against streptococcus cultures of the most varied origin and with highly virulent passage cultures according to the method of Meyer and Ruppel. Contains no artificial preservatives. Dosage: 1 to 10 Cc. for immunization. 2 to 25 Cc. for single curative dose. 3 to 50 Cc. for double curative dose.

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Antistreptococcic Serum Polyvalent; marketed in 10 Cc. syringes. Dose: as a prophylactic, 10 Cc.; curative, 20 to 100 Cc.

H. K. Mulford Co., Philadelphia.

Antistreptococcic Serum, stated to be the serum of horses which have been treated with streptococci of various strains. Marketed in 10 Cc. syringes. Dose: 20 to 80 Cc.

Parke, Davis & Co., Detroit, Mich.

Antistreptococcic Serum, stated to be a polyvalent serum; prepared by immunizing horses with killed cultures of streptococci; the latter are obtained from various human streptococcus infections and certain pathologic conditions common to animals. Preserved with trikresol. Marketed in 10 Cc. piston syringe containers, also in bulbs containing 10 Cc. each.

Frederick Stearns & Co., Detroit, Mich.

Streptolytic Serum, stated to be a composite and polyvalent serum; composite because it contains diphtheric antitoxin in addition to the streptococcus antibodies. Marketed in 10 Cc. syringes some of which have attachments for subcutaneous injection, others for rectal injection.

ANTITUBERCLE SERUM.—

Parke, Davis & Co., Detroit, Mich.

Antitubercle Serum. A serum prepared by treating horses for several months with the toxic products of the tubercle germs. Stated to be an experimental remedy claimed by some to give favorable results in tuberculosis. Marketed in 1, 2 and 4 Cc. bulbs and in 1 ounce bottles. Dose: 1 to 4 Cc. daily hypodermically.

ANTITYPHOID SERUM.—Antityphoid serum is a serum obtained from horses which have been injected with killed cultures of bacillus typhosus.

Actions and Uses.—Antityphoid serum has been employed in the treatment of typhoid fever, but the evidence as to its value is conflicting.

Burroughs, Wellcome & Co., London, England, and New York.

Anti-typhoid Serum is stated to be obtained from horses injected with killed cultures of Bacillus typhosus. Marketed in hermetically-sealed vials containing 25 to 50 Cc.

TETANUS ANTITOXIN.—(Antitetanic Serum and Antitetanic Globulin).—Antitetanic Serum is the blood serum of horses immunized to the toxin of the tetanus bacillus. It is marketed in both liquid and dry forms. Some manufacturers prepare an Antitetanic Globulin; this contains a solution of the globulins of the blood, which are soluble in a saturated sodium chloride solution, together with the antitoxin, and contains the latter in concentrated form.

The antitetanic serum sold in interstate commerce in the United States should conform to the standard established by the United States Public Health and Marine-Hospital Service. This standard is defined as follows (Treasury Department Circular No. 61, Oct. 25, 1907; Bulletin 43, Hygienic Laboratory): "The immunity unit for measuring the strength of tetanus antitoxin shall be ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the Public Health and Marine-Hospital Service."

Uses.—Antitetanic serum is used both as a prophylactic and a curative agent in tetanus. The dried product may be used as a dusting powder.

Dose.—Immunizing, 1,500 units; in tetanus, 3,000 to 20,000 units every four to eight hours.

Serum Antitetanicum is official in the Belgian, French and Swiss Pharmacopeias. Both liquid and desiccated preparations are recognized by the French Pharmacopeia.

Department of Health, City of New York.

Antitetanic Globulin. Preserved with chloroform. Marketed in vials containing 1,500 to 5,000 units.

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Only the concentrated antitoxin (globulin) is marketed; this is offered in syringes containing from 1,500 to 5,000 units each.

H. K. Mulford Co., Philadelphia, Pa.

Tetanus Antitoxin, marketed in syringes containing 1,500 units.

Parke, Davis & Co., Detroit, Mich.

Antitetanic Serum, marketed as follows:

1. In piston containers, 1,500 units.
2. In bulbs containing 1,500 units.
3. Dry.
4. Antitetanic Dusting Powder; the dried serum mixed with a small quantity of chloretone (chlorbutanol).

VACCINE VIRUS.—Vaccine virus is the material obtained from the skin eruptions of calves having vaccinia. The "pulp" is ground and mixed with varying percentages of glycerin. The latter has a certain degree of antiseptic action. It is usually marketed in capillary tubes or as glycerinated points. The serums which exude after the removal of the crusts have been used by some manufacturers for the preparation of "dry lymph points." These are generally regarded as unsatisfactory and the new federal regulations forbid interstate traffic in them after Jan. 1, 1910.

Some firms test the activity of their products on the cornea of rabbits and on calves.

Vaccine virus is official in the Belgian Pharmacopeia under the name "Vaccinum"; in the Swiss as "Virus Vaccinum."

H. M. Alexander & Co., Marietta, Pa.

Marketed as "glycerinated lymph" in capillary tubes; also as "glycerinated vaccine points" and as "dry points."

Cutter Laboratory, Berkeley, Cal.

Marketed in two forms; ivory points (dry) and in capillary tubes.

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Glycerinated Vaccine Virus: (a) in glass capillary tubes and in bulk (for 10, 20 or 50 vaccinations); (b) upon Lederle's Protected Ivory Points; the latter are contained in capsule-like glass tubes which do not require breaking.

H. K. Mulford Co., Philadelphia.

Glycerinated Vaccine Lymph, in sealed capillary tubes. Glycerinated Glass Vaccine Points; glycerinated lymph on sterile glass points.

National Vaccine and Antitoxin Institute, Washington, D. C.

Glycerinated Vaccine Virus marketed in capillary tubes; Glycerinated Vaccine Virus on Ivory Points; special capsule.

Parke, Davis & Co., Detroit, Mich.

Glycerinated Vaccine: (a) in capillary tubes, (b) on ivory points. The points are contained in sealed glass tubes provided with Lee's breakable ring so that they may be opened without difficulty.

BACTERIAL VACCINES

Bacterial vaccines (cf. also tuberculin) are suspensions of the killed bacteria in physiologic salt solution; phenol (0.5 per cent.) is usually added as a preservative. Being suspensions, there is a tendency for the bacteria to settle on standing; hence the vial should be shaken before the syringe is filled and the latter should be shaken before injecting.

Pharmacopeial Preparation.—The French Pharmacopeia contains a *"Vaccin antipesteux,"* consisting of a suspension of killed plague bacilli and a *"Vaccin antipesteux sensibilisé,"* prepared by treating killed plague bacilli with antiplague serum. (Antiplague Serum is also official in the French Pharmacopeia.)

Actions and Uses.—The use of many of these vaccines is in the experimental stage. Bacterial vaccines are often prepared from cultures obtained from the individual to be treated (autogenous vaccines); these usually give the best results. *In fact some authors maintain that "stock" vaccines should be used only when it is impracticable to secure the autogenous agent.*

Bacterial vaccines are used to aid the production of an active immunity. Great care and skill are necessary for their proper use and *no* definite statements as to dosage, etc., can be given; the physician must be guided by the condition of the patient and the manner in which the latter reacts to the treatment.

The following were licensed to manufacture and sell in interstate commerce products of this character prior to July 15, 1909. (Cf. also Tuberculin).

Burroughs Wellcome & Co., London, England and New York City.
Lederle Antitoxin Laboratories, New York City.
H. K. Mulford Co., Philadelphia, Pa.
National Vaccine and Antitoxin Institute, Washington, D. C.
Parke, Davis & Co., Detroit, Mich.
Swiss Serum and Vaccine Institute, Berne, Switzerland.

The following products have been submitted to the Council:

Some of the licensed firms do not market stock vaccines, but prepare them only from cultures from patients.

ACNE VACCINE.—A vaccine prepared from acne bacilli (Bacillus acnes). Said to be useful in the milder forms of acne.

H. K. Mulford Co., Philadelphia.

Acne-Bacterin. This product is marketed in four syringes containing respectively 25 million, 50 million, 100 million and 200 million killed acne bacilli, sold in a package or as separate syringes.

Dose. Initially 5 to 25 millions.

BACILLUS COLI VACCINE.—Bacillus Coli Vaccine seems to cause distinct improvement in certain infections of the urinary tract, due to the colon bacillus. Pain and frequency of micturition are said to be quickly relieved, but complete elimination of the bacteria is stated to be rare. It has also been used in subacute and chronic appendicitis and in gall bladder fistulas where there was an infection with the colon bacillus.

H. K. Mulford Co., Philadelphia.

Coli-Bacterin. Marketed in 1 Cc. vials; each Cc. is said to contain approximately 50,000,000 killed bacilli suspended in normal salt solution.

BACILLUS PYOCYANEUS VACCINE.—This is said to be useful in local infections in which this organism is present. A recent writer states that he has never experienced the slightest beneficial effect either from the autogenous or stock vaccines prepared from this organism, and considers its use illogical.

H. K. Mulford Co., Philadelphia.

Pyocyano-Bacterin. Each Cc. is said to contain about 30,000,000 killed bacilli.

FRIEDLANDER VACCINE.—A vaccine prepared from the Friedlander bacillus. It is said to be useful in infections by the Friedlander bacillus, such as chronic nasal catarrh and chronic gleet.

H. K. Mulford Co., Philadelphia.

Friedlander Bacterin. This product is marketed in packages of four syringes, containing respectively 50 million, 100 million, 200 million and 400 million killed Friedlander bacilli. The single syringes may be obtained separately.

GONOCOCCUS VACCINE.—Gonococcus vaccine has been used with much success in subacute and chronic gonococcus infections involving the prostate, joints, eyes, etc. It has been stated that the strains of the gonococcus are not so diversified as are those of many other organisms and that therefore better results may be expected from stock vaccines of this organism than in many other cases.

Cutter Laboratory, Berkeley, Cal.

Gonococcic Vaccine. Marketed in 1 Cc. vials; each Cc. containing about 50,000,000 cocci suspended in physiological salt solution with 0.4 per cent. trikresol.

H. K. Mulford Co., Philadelphia.

Neisser Bacterin. Each Cc. is said to contain approximately 50,000,000 killed gonococci; preserved by 0.5 per cent. phenol.

National Vaccine and Antitoxin Institute, Washington, D. C.

Gonococcic Vaccine. Marketed in syringes each said to contain 2,000,000 to 50,000,000 bacteria; sterilized by heat.

Parke, Davis & Co., Detroit, Mich.

Gonococcus Vaccine. P., D. & Co. Marketed in bulbs each said to contain 20,000,000 bacteria; sterilized by heat.

MICROCOCCUS NEOFORMANS VACCINE.—Micrococcus neoformans vaccine is claimed to be beneficial in ulcerated tumors in which this organism occurs as a secondary infection.

H. K. Mulford Co., Philadelphia.

Neoformans-Bacterin. Each Cc. is said to contain approximately 50,000,000 killed neoformans micrococci.

PNEUMOCOCCUS VACCINE.—Pneumococcus vaccine has been claimed to be useful in pneumococcic infections. In laboratory experiments it was found inert so far as indicated by any change in the opsonic index when injected into rabbits.

H. K. Mulford Co., Philadelphia.

Pneumo-Bacterin. Each Cc. is said to contain about 50,000,000 killed pneumococci.

STAPHYLOCOCCUS VACCINES.—These have been used with much success in localized surface infections such as acne, acute boils, carbuncles and septic wounds, in multiple subcutaneous abscesses, sinuses, chronic osteomyelitis, etc. The best results are obtained with autogenous vaccines. Laboratory experiments have also shown that these vaccines possess distinct antigenic properties when tested by infections in rabbits with subsequent opsonin determinations.

Cutter Laboratory, Berkeley, Cal.

Staphylococcus Vaccine. Each Cc. contains about 500,000,000 cocci preserved with 0.4 per cent. trikresol.

H. K. Mulford Co., Philadelphia.

Four varieties of vaccine are offered:

1. *Staphylo-Albus Bacterin.* From staphylococcus pyogenes albus.
2. *Staphylo-Aureus Bacterin.* From Staphylococcus pyogenes aureus.
3. *Staphylo-Bacterin.* Containing a mixed culture of staphylococcus albus, aureus, and citreus.
4. *Staphylo-Acne-Bacterin.* A mixed vaccine prepared from cultures of staphylococcus albus, aureus, and citreus with bacillus acnes.

All the above are marketed in packages of four syringes containing respectively 250 million, 500 million, 1 billion and 2 billion [illegible] The syringes of staphylo-acne bacterin contain [illegible] 25 million, 50 million, 100 million and 200 [illegible] single syringes may be obtained separately.

Parke, Davis & Co., Detroit, Mich.

Four forms of vaccines are offered.
1. From staphylococcus pyogenes albus.
2. From staphylococcus pyogenes aureus.
3. From staphylococcus pyogenes citreus.
4. From the three preceding combined.
Each Cc. contains about 400,000,000 bacteria.

STREPTOCOCCUS VACCINE.—Recommended in various infections by streptococci (scarlet fever, puerperal septicemia, erysipelas, etc.).

H. K. Mulford Co., Philadelphia.

Strepto-bacterin. Each Cc. contains about 50,000,000 killed streptococci.

Parke, Davis & Co., Detroit, Mich.

Streptococcus Vaccine. Each Cc. contains about 40,000,000 streptococci pyogenes.

TYPHOID VACCINE.—Inoculations with typhoid vaccines have been practiced extensively in various armies; the results, both as regards the morbidity and the mortality from typhoid fever seem to have been distinctly favorable. Such inoculations have been recommended in institutions where many of the personnel are not infrequently exposed to typhoid infection and in communities threatened with or affected by typhoid epidemics. It has been suggested that typhoid vaccines may be of value in the treatment of typhoid carriers.

H. K. Mulford Co., Philadelphia.

Typho-bacterin. Each Cc. contains about 50,000,000 killed typhoid bacilli.

TUBERCULIN PREPARATIONS

Tuberculins represent the toxins of the tubercle bacillus. They may be in the form of a filtered extract of the bacilli or may be composed of the pulverized insoluble substance of the bacilli themselves. In the latter, or emulsified form, tuberculin is known as tubercle vaccine, and might be classed with the "Bacterial Vaccines" (which see). Tuberculins are therefore of two general classes:

1. Those prepared from the germ-free culture media, and containing for the most part only soluble products of the bacillus. This class includes Tuberculin "old" (or Tuberculin Koch) and Tuberculin Denys (Bouillon Filtré).

2. Those which contain the greater part of the germ body itself; they include the new tuberculins of Koch ("T. R." and the "New Tuberculin Koch [Bacillus emulsion]").

OLD TUBERCULIN, "O. T." (Tuberculin Originale, "T. O."; Tuberculin Koch).

Old Tuberculin is prepared by evaporating a 6 to 8 weeks' bouillon culture of tubercle bacilli at boiling temperature to 1/10 of its volume and filtration through clay or porcelain. A clear, syrupy, amber colored fluid; containing about 50 per cent. glycerin[1]. Frequently marketed in "serial dilutions" by which the doses may be gradually increased.

TUBERCULIN "DENYS" ("B. F."; Bouillon Filtrate; Bouillon Filtré, Denys).

This is the bouillon from cultures on which tubercle bacilli of the human type have grown to maturity (5 to 6 weeks) freed from germs by filtration through porcelain.

"NEW TUBERCULIN"—"T. R."—New Tuberculin represents a portion of the tubercle bacillus.

It is prepared as follows: A suspension of ground virulent tubercle bacilli is centrifugalized; the upper layer, consisting of extractives and fatty substances mixed with bacilli, is removed while other bacilli and fragments are thrown to the bottom. The sediment is again ground and centrifugalized; the process is repeated until almost no sediment remains. The second and supernatant liquids are united and to them glycerin, 20 per cent., and a little formaldehyde in solution are added; this emulsion is the "T. R." Each Cc. represents the residue from approximately 10 mg. dry originally virulent tubercle bacilli (human).

NEW TUBERCULIN, KOCH, BACILLI EMULSION ("B. E."). This represents the entire bacilli whether soluble or insoluble.

The germs are simply crushed and pulverized and mixed with equal parts of water and glycerin. The suspension contains 5 mg. dry, originally virulent, tubercle bacilli (human).

Action and Uses.—The different modifications and preparations of tuberculin are practically identical in their physiologic effects. They vary chiefly in a quantitative way and in absorbability. They are used both for diagnostic and therapeutic purposes:

Diagnostic Use.—"Tuberculin depends for its diagnostic value on a special sensitiveness acquired by the tissues after a tuberculous infection. This sensitiveness is manifested by an inflammatory response when tuberculin is brought in contact with the skin or mucous membrane."[1] The original tuberculin of Koch is considered the most satisfactory preparation for diagnosis but other filtered extracts are suitable. There are four principal methods of applying the test: 1. The Cutaneous Test (von Pirquet); 2. The Inunction Test (Moro); 3. The Conjunctival Test (Wolff-Eisner, Calmette); 4. The Subcutaneous Test. The proper performance and correct interpretation of these tests require much knowledge and experience. Some of them, notably the conjunctival and subcutaneous tests, may, under certain circumstances and in the hands of inexperienced or careless persons, do much harm.

Use in Therapeutics.—The successful employment of tuberculin in therapeutics depends upon a thorough knowledge of the disease and the individual patient; in many cases its use may do much harm. Baldwin[2] states the general principle involved as follows:

"The therapeutic use of tuberculin may have two fairly definite objects in view: One is to diminish the sensitiveness to the toxin—i. e., to itself—the other is to create intermittent local reactions and thus to stimulate the disease focus to heal or become absorbed. The possibility of the production of a recognizable immunity to the disease thus far by any form of tuberculin treatment is open to question. A certain degree of resistance is indirectly accomplished when sensitiveness to tuberculin is decreased to a marked degree, accompanied by constitutional improvement. Such specific resistance as can be obtained by tuberculin is gradually lost after the treatment is discontinued, so that statements that patients can be made 'immune' are unjustified."

As regards the choice of tuberculin and the method of administration Baldwin says:

"For therapeutic use the choice chiefly lies between the solutions and emulsions or vaccines. Opinions are too variant to permit the formulation of rules. In general the dosage is more controllable with solutions, and reactions are less frequent from emulsions." "Owing to the uncertain absorption of emulsions, reactions may ensue unexpectedly if the dose is increased greatly. The solutions are therefore safer for tuberculin immunization until some accurate standards for determining the dosage shall be made. The dosage is at present empirical; each individual case must be an experiment, and the symptoms carefully observed before each dose. The subcutaneous injection is the only satisfactory method for the administration of tuberculin. Tuberculin pills or capsules for stomach ingestion and suppositories per rectum are too uncertain of absorption to warrant any recommendation. Inunctions of tuberculin have a possible field in treatment of skin tuberculosis; otherwise they are also impracticable."

Pharmacopeial Preparations.—Koch's "old tuberculin" is official in the German Pharmacopeia under the name "Tuberkulinum-Kochi, Tuberkulin"; in the Belgian under the name "Tuberculinum"; in the Swiss under the name "Tuberkulinum Concentratum"; and in the French under the name "Tuberculine Brute." The French and Swiss Pharmacopeias contain also diluted tuberculin ("Tuberkulinum Normale Dilutum" of the Swiss, "Tuberculine Diluée" of the French, Pharmacopeia), prepared by diluting 1 Cc. of the concentrated tuberculin with 10 Cc. of 0.5 per cent. phenol. The French Pharmacopeia contains also a "Tuberculine Solide Purifiée" prepared by precipitating the "Tuberculine Brute" with ten times its volume of 80 per cent. alcohol, washing the precipitate with ether and drying *in vacuo*. For use 0.01 Gm. of this is dissolved in 100 Gm. distilled water.

TUBERCULOSIS SERUM VACCINE.—An emulsion of human tubercle bacilli, sensitized by the application of tuberculosis serum.

The production of sensitized tubercle bacilli, or bacilli which are capable of complement fixation, is accomplished with the assistance of an efficient tuberculosis-immune serum, which has a considerable content of specific amboceptor antituberculin. The content of this serum in specific amboceptor is ascertained according to the method of complement fixation. Besides antituberculin, this serum contains agglutinating, precipitating and bacteriotrope immune bodies.

Emulsions of sensitized tubercle bacilli are prepared as follows: Human tubercle bacilli, after having been thoroughly washed and briskly dried, are mixed with fresh tuberculosis serum, the quantity of which is calculated from the determination of the immunity bodies. This mixture is left for several days in the incubator, at a temperature of 37° C., and is then shaken in an apparatus, with glass beads, until intact tubercle bacilli are no longer demonstrable in the removed sample. The broken-up masses of bacilli are then separated from the serum, through centrifugalization, washed with physiologic salt solution, and finally worked into fine emulsions, with 40 per cent. glycerin water, to which has been added phenol 0.5 per cent. The contents of this emulsion in bacillary substance amounts to 0.005 Gm. in 1 Cc. The original emulsions and dilutions are to all intents and purposes permanently durable, provided they are kept in a cool place, not exposed to freezing, and protected from the light.

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[1] Some firms add trikresol to their preparations of this tuberculin; the necessity or advisability of this is considered questionable if the glycerin is of the proper strength. It is stated that trikresol will, in the course of time, weaken the tuberculin.

[1] Baldwin: THE JOURNAL A. M. A., 1910, liv, 260.
[2] Baldwin: THE JOURNAL A. M. A., 1910, liv, 260.

Actions and Uses.—It is claimed that this emulsion contains specific immune bodies which are non-poisonous for healthy and tuberculous subjects, but are capable of exerting a remarkable effect on tuberculous processes.

Preparations[1]*:*

The use of ready made "serial dilutions" as a routine practice is not to be commended. Such solutions deteriorate rapidly, especially in the presence of phenol or trikresol and the rate of such deterioration may not be the same in different dilutions; competent authorities think it desirable to limit the use of dilutions to one month or even less in the case of soluble tuberculins. Some firms state the date of manufacture on the labels; it is desirable that this should de done in all cases. Sufficient precautions are often not given as to the care necessary in passing from a weak to a stronger solution.

The dangers from the use of tuberculin in the eye are not sufficiently emphasized by some firms.

The "conclusions" which some manufacturers state may be drawn from a "positive reaction" seem to the Council to be in some cases stated too dogmatically.

H. M. Alexander & Co., Marietta, Pa.

Original Tuberculin "O. T." (Koch); marketed in 1 and 3 Cc. vials.

Tuberculin.—Bouillon Filtrate "B. F." (*Human*). 1 and 3 Cc. vials.

Tuberculin Residue. T. R. (Human) (Koch).

Bacillin Emulsion "B. E." (*Human*).

Dixon's Tubercle Bacilli Extract (See "Fluid of Dixon," Medical News, Jan. 17, 1891). An extract of tubercle bacilli dissolved in normal saline solution. Marketed in syringes containing the extract from 1 mg. bacilli. The standard therapeutic dose is a weekly injection of the contents of 1 syringe, to be reduced in amount and frequency if the patient shows signs of reaction.

Dixon's Suspension of Dead Tubercle Bacilli (See "Possibility of Establishing Tolerance for Tubercle Bacilli," Medical News, Oct. 19, 1889). A suspension of dead tubercle bacilli in physiologic salt solution which have been decreased by prolonged treatment with alcohol and ether. Marketed in syringes containing 0.001 mg. bacilli, which is the standard therapeutic dose (cf. preceding).

Tuberculin for the Cutaneous Test (von Pirquet). A solution of *tuberculin original* in capillary tubes. Solutions of two strengths, one for children and one for adults, are prepared.

Tuberculin Ointment Capsules (for the Moro Test). Consists of equal parts by weight of Koch's Old Tuberculin and anhydrous wool fat. Marketed in capsules.

Tuberculin for the Ophthalmic Test. Tuberculin Precipitatum, "T. P." Prepared by precipitation with 95 per cent. alcohol from Koch's Old Tuberculin. Marketed in tubes in solutions of two strengths (0.5 per cent. and 1 per cent.).

Tuberculins for the Detre Differential Diagnostic Test. Three capillary tubes: 1. Tuberculin Original, "T. O." 2. Bouillon Filtrate, "B. F." (Human). 3. Bouillon Filtrate, "B. F." (Bovine).

Cutter Laboratory, Berkeley, Cal.

Tuberculin "Old," Koch; Concentrated; in 1 Cc. vials and preserved with trikresol; for use in solutions only. Also in serial dilutions; the latter in packages containing 5 bottles each holding about 8 Cc., ranging from 0.01 to 100 mg. per Cc.

Deny's Bouillon Filtrate; in 1 Cc. vials; preserved with trikresol; for use in dilutions only. Also in serial dilutions.

Tubertulin, Koch (*concentrated*).—For the *cutaneous reaction;* in capillary pipettes.

Tuberculin, Purified; 1 per cent. solution, for the ophthalmic reaction.

Farbwerke vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Tuberculin "Koch" (old). Marketed in vials containing 1 Cc., 5 Cc. or 50 Cc.

New Tuberculin "Koch" (T. R.). Marketed in vials containing 1 Cc. and 5 Cc.

Koch's Bacilli Emulsion. Marketed in vials containing 1 Cc. and 5 Cc.

Tuberculosis Diagnostic "Hoechst." Dried tuberculin free from glycerin, prepared from Tuberculin Koch (old Tuberculin). To be used in 0.1 per cent. solutions for the tuberculo-ophthalmic reaction.

Tuberculosis Diagnostic "Hoechst" Dry in Tubes. Each tube contains 0.005 Gm. (1/10 grain).

Dosage. The contents of a tube are dissolved in 5 Cc. of cold sterile water.

Tuberculosis Diagnostic "Hoechst" 0.1 per cent. solution.

Dosage. The contents of the tube are ready for use.

Tuberculin T. O. A. Original Tuberculin T. O. A. This preparation is a bouillon filtrate. For preparation see Tuberculin "Deny's," Supplied in bottles containing 1 Cc. and 5 Cc.

Vacuum Tuberculin. Tuberculin T. O. A. reduced to 1/10 of its volume in a partial vacuum at a low temperature.

Actions and Uses. It is intended solely for the treatment of patients who exhibit too violent reactions to Old Tuberculin, to Tuberculin T. R. and to Tuberculin Bacilli Emulsion.

Vacuum Tuberculin is marketed in glass bottles containing 1 Cc. and 5 Cc.

Dry Dead Tubercle Germs. For use in making the bacillary emulsion for the tuberculo-opsonic test.

Bovine Tuberculin. Tuberculin corresponding to Tuberculin "Koch" Old but prepared from bovine bacilli. Marketed in bottles containing 1 Cc. or 5 Cc.

Bovine Bacilli Emulsion. Corresponding to Koch's Bacilli Emulsion but prepared from bovine bacilli. In original bottles containing 1 Cc. and 5 Cc.

Bovine Tuberculin T. R. C[illegible] berculin T. R. but prepared from bovine bacilli. 1 [illegible] 1 Cc.

Bovine Tuberculin Old. A bouillon filtrate from bovine bacilli. Indications similar to those for Tuberculin T. O. A. Supplied in glass bottles containing 1 Cc. and 5 Cc.

Vacuum Bovine Tuberculin. A tuberculin prepared from bovine bacilli by the process for vacuum tuberculin. The advantage of the vacuum preparations is only in their better keeping qualities. Vacuum bovine tuberculin is supplied in glass bottles containing 1 Cc. and 5 Cc.

Polygenous Tubercle Bacilli Emulsion. A bacilli emulsion prepared from eight different cultures of tubercle bacilli which differ as much as possible from each other.

Dead Bovine Tubercle Bacilli. Supplied in flasks containing 1 Gm. and 5 Gm.

Tuberculin Residue. Tuberculin residue is supplied in the form of a moist paste and a dry preparation in vials of 1 Gm. and 5 Gm. each.

Tuberculosis Serum Vaccine "Hoechst." Emulsions of sensitized tubercle bacilli are supplied in the original concentration, in vials of 1 and 5 Cc. each, and also in serial dilutions.

Dosage. The treatment is begun with 0.1 Cc. of a dilution 1/1,000,000 and the dose gradually increased until 0.5 Cc. of the original emulsions are readily tolerated and the corresponding clinical effects are demonstrable. It should not be used in the presence of cachexia, mixed infection or permanent rise of temperature.

Tuberculin Gesellschaft, St. Petersburg, Russia. (Morgenstern & Co., New York.)

Endotin.—Tuberculinum Purum. Endotin is the purified extract of a filtered culture of human bacilli in 50 per cent. glycerin.

Endotin is prepared exactly as Koch's "Old" tuberculin, but is subsequently treated with alcohol, ether, chloroform and xylol in order to eliminate the deuteroalbumoses present.

Tuberculinum purum is now supplied in a carton of 4 series which are intended to represent a course of tuberculin treatment. Each series consists of 7 ampuls.

H. K. Mulford Co., Philadelphia.

Tuberculin "Old" (O. T.). Marketed in 1 Cc. vials; also in serial dilutions in 5 vials of 8 Cc. each progressing by doses of 2 minims containing 0.001 mg. to 2 minims containing 10 mg.; in rectal suppositories containing from 1 to 500 mg. tuberculin in cacao butter.

Tuberculin, Bouillon Filtrate, Denys. Marketed in 1 Cc. vials; also in serial dilutions.

Tuberculin "R." Marketed both in concentrated form and in serial dilutions.

Bacillin Emulsion "B. F." Marketed in 1 Cc. vials; also in serial dilutions.

Tuberculin Ophthalmic Test Solution. Prepared from the precipitate obtained on treating Tuberculin "Old" with 70 per cent. alcohol; ½ and 1 per cent. solutions in physiological salt solutions are made of the dry precipitate.

Tuberculin Ophthalmic Test Tablets. The precipitate as prepared above; each tablet contains 1 mg. dried tuberculin; to be dissolved in 0.13 Cc. (2 minims) of water.

Tuberculin Ointment. An ointment consisting of 50 per cent. of tuberculin "Old" with an equal part of adeps lanae hydrosus.

Parke, Davis & Co., Detroit, Mich.:

Tuberculin, "Old" (Koch). Marketed in ½ Cc. bulbs.

Tuberculin B. E. (concentrated). Bacillus Emulsion, marketed in bulbs containing 1 mg. of dry tubercle solids per Cc.

Tuberculin B. F.; marketed in 1 Cc. bulbs; contains 0.4 per cent. trikresol.

Tuberculin T. R. Marketed in 1 Cc. bulbs in 2 strengths; one contains 0.001 mg. of tubercle solids per Cc., the other 1 mg. per Cc.

Tuberculin Discs for the Ophthalmic Reaction. Prepared by precipitating concentrated tuberculin with alcohol. Each disc contains 3.3 mg. tuberculin which when dissolved in 0.3 Cc. (5 minims) of water makes a 1 per cent. solution.

Moist Dead Tubercle Germs. For use in making the bacillary emulsion for the tuberculo-opsonic test.

Bacterio-Therapeutic Laboratory, Asheville, N. C.

This laboratory is licensed to manufacture all tuberculin preparations including Watery Extract of Tubercle Bacilli (von Ruck) and Tubercle Bacilli Emulsions (von Ruck); they are supplied only to physicians who make special applications for them.

Other Serum Products

ANTIRABIC VACCINE.—An emulsion of the cords of rabbits that have died as a result of the subdural injection of fixed rabies virus. The fixed virus is obtained by passage of rabies virus through a long series of rabbits until the animals die after a uniform period of incubation; this period may vary according to the strain of virus. The cords are removed from the rabbits and, as a rule, dried over potassium hydroxide for a period of from 2 to 15 days.

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[1] The directions given by some manufacturers as to the method of using and the conclusions to be drawn from the use of their preparations seem to the Council to be open to criticism in certain respects. Thus many firms enclose droppers for use in making dilutions; droppers are not sufficiently accurate for use with strong solutions. ipettes, accurately calibrated in the metric system, should be used

Use.—Antirabic vaccine is used for the preventative treatment of rabies. Emulsions of the cords are prepared with broth or saline solution and injected subcutaneously. The "scheme of dosage" varies according to circumstances, but the general principle consists in daily injections, beginning with an emulsion of a cord dried for from 8 to 14 days and gradually increasing until a "2 day" cord is used.

H. M. Alexander & Co., Marietta, Pa.

Antirabic Vaccine. The fixed virus is of the strain employed by the Hygienic Laboratory, Washington, D. C. An emulsion of vaccine in glycerin sufficient for one dose, together with a syringe and needle, is contained in a vacuum tube by which a low temperature may be maintained for a period of 36 hours. A dose is sent each day by mail; the treatment requires 18 to 22 days.

ERYSIPELAS AND PRODIGIOSUS TOXINS (Coley).—Parke, Davis & Co., Detroit, Mich. A mixed culture of Streptococcus Erysipelatis and Bacillus Prodigiosus made according to the specifications of Dr. W. B. Coley. Marketed in 1 oz. bottles.

Action and Uses.—Loeb summarizes the results of the treatment of sarcoma with these toxins as follows: "It is therefore likely that the treatment of inoperable sarcoma with the toxins of streptococcus and Bacillus prodigiosus leads to a cure in approximately 4 to 9 per cent. of cases. And some results obtained so far suggest that this method of treatment may prove of value as a postoperative procedure in diminishing the number of recurrences, and that in a certain number of cases it might limit the necessity for amputation of the limb in cases of sarcoma of the long bones. As to its mode of action, nothing definite can be stated, but it is likely that the toxins themselves, as well as the local and general reactions they produce, frequently affect the life of the sarcoma cells unfavorably."

The toxins are injected in gradually increasing doses, at first in a part of the body removed from the tumor, and later, if possible, directly into the tumor itself.

NORMAL HORSE SERUM.—Injection of this has been recommended in various conditions where the coagulative power of the blood is deficient, as in hemophilia, severe anemias and purpura with hemorrhagic tendencies. Applied locally to bleeding surfaces it is said to act as a styptic and to have a favorable action on septic wounds. There is, however, an element of danger in the use of this or any other serum in certain conditions (Anaphylaxis), and while this is slight because of the rarity of dangerous effects it is sufficient to make the use of serums for purposes in which their value is extremely doubtful a questionable procedure.

National Vaccine and Antitoxin Institute, Washington, D. C.

Sterile Normal Horse Serum. Marketed in syringes containing 10, 15 and 20 Cc.

H. K. Mulford Co., Philadelphia.

Normal Serum (From the Horse). Marketed in packages of two syringes, each containing 10 Cc.

Noguchi Test for Syphilis

Noguchi test for syphilis is a modification of the method of Wassermann and involves the use of two standardized papers as follows:

Amboceptor Paper.—This is obtained by injecting washed human blood corpuscles (erythrocytes) into rabbits, at intervals of five to seven days, over a period of five or six weeks. Ten days are allowed to elapse after the last injection. The rabbits are then bled and the serum collected. Filter paper is now saturated with this serum and allowed to dry. The paper is cut in strips and set aside until wanted for use. In this form amboceptor will keep for a considerable length of time.

Amboceptor paper is standardized by measuring its specific activity. The measurement of specific activity consists of finding the amount of amboceptor necessary to cause hemolysis in 1 Cc. of suspended human red corpuscles, one drop of blood in 4 Cc. normal saline solution with 0.02 Cc. of fresh guinea-pig serum. Incubate this at a temperature of 37½ C. for one hour. The quantity of paper necessary to cause hemolysis under these conditions is known as 1 unit.

Antigen Paper.—Antigen is made by rubbing liver tissue with sand and extracting with alcohol. One Gm. of liver tissue is macerated in 10 Cc. of alcohol for one week at 37.5 C., shaking the container every day. It is filtered until clear and the filtrate evaporated. The resulting extract is dissolved in ether and this solution poured into a large quantity of acetone. The acetone precipitates certain lipoid substances, which are then collected and redissolved in ether-alcohol and constitute the antigen. Antigen papers are now prepared by saturating filter paper with this solution and allowing it to dry, after which it is cut into strips. The unit of standardization is the amount of antigen paper necessary to prevent hemolysis of human red corpuscles in the presence of syphilitic serum. The antigen paper must not of itself cause hemolysis.

H. K. Mulford Co., Philadelphia.

Noguchi Test Mulford. Noguchi test Mulford consists of amboceptor paper and antigen paper in a package accompanied with full directions for use.

Amboceptor Paper. Amboceptor paper is marketed in a glass tube.

Antigen Paper. Antigen paper is marketed in tubes containing acetone, because it is believed to prevent oxidation. When wanted for use, a strip of the paper is removed from the vial and the acetone allowed to evaporate.

SILVER CITRATE.—Silver citrate, $Ag_3C_6H_5O_7$, is the normal silver salt of citric acid.

Solution of citric acid is neutralized with sodium carbonate and a solution of silver nitrate added with constant stirring. The precipitate is allowed to subside, washed with water, and dried on porous plates. The entire operation must be conducted under protection from the light.

Silver citrate forms a white, odorless, heavy powder which is moderately sensitive to the light. It dissolves in 3,800 parts of water. On heating to redness a residue of metallic silver remains, weighing 63.16 per cent. of the original salt.

It should be carefully protected from the light.

Actions and Uses.—Silver-citrate is a non-irritating antiseptic.

It is said to be useful in the treatment of wounds, ulcers, gonorrhea and other affections of the mucous membranes.

Dosage.—It may be applied in substance to wounds. Solutions of from 1 to 4,000 to 1 to 10,000 are recommended for injection into the body cavities, the urethra, etc.

Proprietary Preparations:

ANTISEPTIC-Credé.—A name applied to Silver Citrate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York).

SILVER LACTATE.—Silver lactate, $Ag.C_3H_5O_3 + H_2O$, is the normal silver salt of lactic acid.

It is prepared by dissolving freshly precipitated silver carbonate in a solution of lactic acid by the aid of heat and concentrating the solution until crystallization begins. The operation must be conducted in a darkened room.

Silver lactate forms colorless crystalline needles, turning brown on exposure to light; it dissolves in 15 parts of water. On heating it leaves a residue of metallic silver weighing 50.2 per cent. It is usually colored somewhat brown and gives with water a brownish or reddish solution. The salt must be protected from the light.

Actions and Uses.—The 1 to 300 to 1 to 500 aqueous solution is said to be equal in disinfecting power to a 1 to 1000 solution of mercuric chloride. It is irritating if applied in substance to wounds.

It is intended for all purposes for which a powerful antiseptic is desired.

Dosage.—1 to 100 to 1 to 2,000 solutions.

Proprietary Preparations:

SILVER LACTATE-Credé.—A name applied to Silver Lactate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York).

SODIUM CACODYLATE—Sodii Cacodylas.—Sodium Dimethylarsenate.—Sodium cacodylate, $(CH_3)_2AsO.ONa + 3H_2O$, is the sodium salt of cacodylic acid (dimethyl arsenic acid), $(CH_3)_2AsO.OH$.

It is prepared by distilling arsenous oxide with potassium acetate, oxidizing the distillate, composed of cacodyl $AS_2 (CH_3)_4$, and cacodyl oxide, $(As_2 (CH_3)_4O$, with mercuric oxide, neutralizing the cacodylic acid with solution of sodium hydroxide and concentrating to crystallization.

It is a white powder, very soluble in water, forming needle-shaped crystals, hygroscopic, but otherwise of marked stability. The aqueous solution is alkaline toward litmus, but nearly neutral toward phenolphthalein.

On addition of silver nitrate T. S. to a solution of 1 Gm. of sodium cacodylate in 20 Cc. of water, a white precipitate is formed which is soluble in nitric acid and in ammonia water.

If to 1 Cc. of a 1 per cent. solution of sodium cacodylate 10 Cc. of hypophosphorous acid are added and put aside for 1 hour *in a closed container, a disgusting odor of cacodyl (caution on* account of extreme poisonous properties of the gas) is apparent (distinction from sodium monomethyl arsenate).

If calcium chloride T. S. solution be added to a solution of sodium cacodylate (1:20) no precipitate will be produced in the cold nor on warming (distinction from sodium monomethyl arsenate).

When warmed with ammonium molybdate T. S. a solution of sodium cacodylate (1:20) should not produce a yellow precipitate; nor should a yellow precipitate form when the 1:20 solution is treated with sodium thiosulphate T. S. or with hydrogen sulphide T. S.; nor should a white *precipitate form* when, after acidulating with hydrochloric acid, barium chloride T. S. is added to the 1:20 solution.

Estimation: A weighed quantity (approximately 1 Gm.) is dissolved in 25 Cc. of water, one drop of methyl orange T. S. added, and then normal hydrochloric acid V. S. added until a faint pink color appears; 1 Cc. normal hydrochloric acid V. S. = 0.2125 Gm. of sodium cacodylate. If to the finished titration phenolphthalein T. S. is added a volume of normal potassium hydroxide V. S. equal to the volume of normal acid used, should be required to produce a red color; $(CH_3)_2AsO.OH$ being a monobasic acid *toward phenolphthalein.*

Actions and Uses.—The action of sodium cacodylate is similar to other arsenic compounds, but it is said to be much less toxic than the ordinary preparations of arsenic and is also less apt to cause undesirable side effects. This superiority is due to the slow liberation of the arsenous acid in the body.

The cacodylate has been particularly recommended in obstinate psoriasis, pseudoleukemia, diabetes, anemia, chlorosis, tuberculosis, malarial cachexia, etc.

Dosage.—0.025 to 0.12 Gm. (½ to 2 grains) in pills, hypodermically or by enema.

SODIUM CINNAMATE—Sodii Cinnamas.—Sodium Phenylacrylate. Sodium cinnamate, $C_6H_5.CH:CH.COONa = NaC_9H_7O_2$, is the sodium salt of cinnamic acid (benzene-propenoic) acid, $C_6H_5CH:CH.COOH$.

Sodium cinnamate may be prepared by saturating a hot aqueous solution of sodium carbonate with cinnamic acid, evaporating and crystallizing. Cinnamic acid is obtained from balsam of tolu or may be produced synthetically by heating together benzaldehyde, sodium acetate, and acetic anhydride. By the latter method of preparation a purer product is produced which it is claimed is free from any by-effects of the acid from natural sources.

Sodium cinnamate is a white, crystalline powder, soluble in water, 1 part in 20, the solution being faintly alkaline. On boiling the alkalinity becomes stronger on account of the decomposition of the cinnamic acid forming sodium carbonate. Solution of sodium cinnamate (1 to 25) yields on the addition of ferric chloride a yellow precipitate. On adding it to potassium permanganate solution, the red color of the permanganate is destroyed and the odor of benzaldehyde developed. If a solution of sodium cinnamate is treated with dilute sulphuric acid, a precipitate of cinnamic acid appears, which after purification should melt at 133° C. (271.4° F.).

It is incompatible with acids and with oxidizing agents, e. g., potassium permanganate.

Actions and Uses.—Balsam of Peru, cinnamic acid and sodium cinnamate are recommended by Landerer for the treatment of phthisis, the drugs being injected intravenously under strict aseptic precautions. The effect is referred by him to an inflammatory reaction, localized about the tuberculous foci which leads to cicatrization. He records very favorable results in well-selected early cases, and other clinicians have also reported some successes, although the treatment fails very often. The synthetic cinnamate is preferred on account of its greater purity.

Dosage.—0.001 Gm. (1/60 grain), gradually increased to 0.02 Gm. (1/3 grain), in 1 to 5 per cent. solution, injected intravenously thrice weekly for long periods (3 to 18 months).

SODIUM LYGOSINATE—Sodii Lygosinas.—Lygosin Sodium. — Sodium lygosinate, $CO:(CH:CH.C_6H_4.ONa)_2 + 7H_2O = Na_2C_{17}H_{12}O_3 + 7H_2O$, is the sodium salt of dioxy-dibenzal acetone.

It is prepared by condensation of 2 molecules of salicylic aldehyde with 1 molecule of acetone and combining the product with sodium.

Sodium lygosinate occurs in glossy, greenish prisms, soluble in 16 parts of water at [illegible]8.4° C. (67.12° F.), or in about 9.5 parts at 37° C. (98.6° F.). It is soluble to the *extent of 1 per cent.* in cold alcohol, easily soluble in hot alcohol and in glycerin. Its aqueous solution has a ruby-red color and is alkaline in reaction.

On ignition, 1 Gm. *of* sodium lygosinate leaves a residue of sodium carbonate weighing 0.243 Gm. From the aqueous solution acids precipitate a thick yellow precipitate of diortho-cumarketone. The solution is fairly stable when kept in a cool place, protected from the air, and is not decomposed on boiling, but is decomposed by weak acids, even the carbonic acid of the air.

Actions and Uses.—The powder causes sneezing. Sodium lygosinate is said to possess a germicidal power similar to that of the silver salts, slightly weaker, but practically non-irritant. It is claimed to be useful in gonorrhea, especially of the uterus.

Dosage.—Injections of a 3 to 8 per cent. solution daily or every second or third day.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany. (C. Bischoff & Co., New York.) German patent No. 110,521. U. S. trademark No. 40,177.

SODIUM OLEATE[1]—*Sodii Oleas.*—Sodium oleate, $NaC_{18}H_{33}O_2$ is the sodium salt of oleic acid.

Sodium oleate is obtained by neutralizing sodium hydroxide with oleic acid.

Sodium oleate is a white solid, which crystallizes from absolute but not from aqueous alcohol. When heated it melts and burns leaving a residue of sodium carbonate. *It is soluble in about* 10 parts of water, in about 20 parts of alcohol, and in about 100 parts of boiling ether. When dissolved in water it is partly decomposed (hydrolysed) into oleic acid and sodium hydroxide; hence its aqueous solution has an alkaline reaction to phenolphthalein; its solution in strong alcohol is neutral to this indicator. It is precipitated from its aqueous solution by saturation with sodium chloride.

Acids separate from its aqueous solution oleic acid, which collects at the surface of the liquid, in an oily layer. If a solution of 5 Gm. of sodium oleate, in 50 Cc. of water be mixed with 3 Cc. of tenth-normal *oxalic acid solution*, the subsequent addition of a few drops of phenolphthalein test solution should not produce a pink coloration.

An aqueous solution of sodium oleate (1 in 20) should remain unchanged in color upon the addition of ammonium sulphide test solution; and upon acidulating another portion of the solution with hydrochloric acid and filtering, the filtrate should remain unchanged in color when an equal volume of hydrogen sulphide test solution is added and the mixture is allowed to stand well stoppered in a warm *place for half* an hour (absence of metallic impurities).

Action and Uses.—Sodium oleate is antacid and mildly laxative. It is commonly added to laxative pills. It has been claimed without any definite evidence that it is especially useful in disease of the biliary tract.

Dosage.—0.12 to 1.3 Gm. (2 to 20 grains).

SODIUM PERBORATE—Sodii Perboras.

Sodium perborate, $NaBO_3.4H_2O$, is the sodium salt of perboric acid. It should contain not less than 9 per cent. of available oxygen.

Sodium perborate may be prepared by the action of an alkali peroxide and carbon dioxide on an alkali borate (U. S. Pat. No. 842,470) and by other methods.

Sodium perborate occurs as a white granular salt, odorless and soluble in water; the solution has a saline taste. It is decomposed by water into hydrogen peroxide and sodium metaborate, $NaBO_3 + H_2O = H_2O_2 + NaBO_2$ producing an alkaline solution. It is decomposed by catalyzers, ferments and animal tissues. Heated to 60° C. (140° F.) it evolves oxygen and when heated to a higher temperature it gradually loses all its available oxygen and water *of crystallization.*

On adding to 10 Cc. water in a test tube, one drop of potassium dichromate test solution then ten drops of dilute sulphuric acid and pouring a few Cc. of ether *on top, the subsequent* addition of a few drops of an aqueous solution of sodium perborate will cause a blue color to appear at the zone of contact of the two liquids. After shaking the ether layer will separate with a blue color.

If 0.20-0.03 Gm. sodium perborate accurately weighed be dissolved in 50 Cc. water and 10 Cc. dilute sulphuric acid added, *to produce* a permanent pink color, not less than 11.25 Cc. tenth normal permanganate solution should be required for each 0.1 Gm. of substance taken (indicating not less than 9 per cent. of available oxygen).

Action and Uses.—Sodium perborate is an antiseptic, deodorant and bactericide, and is used in wounds, purulent sores, varicose ulcers, etc. In general, it is used *in place* of hydrogen peroxide, over which it has the advantage of yielding an alkaline solution. It is applied as a dusting powder or in a 2 per cent. solution.

Non-proprietary Preparation:

Sodium Perborate Merck.—Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

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[1] This preparation should not be confounded with the preparations sold as "Acid sodium oleate" or "Sodium Oleate, acid" which are mixtures of sodium oleate and free oleic acid, containing from about 5 to 30 per cent. of the latter.

Proprietary Preparation:

PEROGEN BATH—Oxygen Bath Salts. Perogen.—Perogen bath is a preparation consisting of a catalyzer and sodium perborate capable of yielding 10 per cent. of oxygen, the two substances being wrapped separately.

The catalyzer is a light yellow odorless powder, and is made by a method which is the subject of a patent application now pending. The oxygen contents may be determined by any of the well-known methods.

Actions and Uses.—The catalyzer is a medicinally indifferent substance. When the two substances are mixed with water the catalyzer causes the liberation of the available oxygen of the sodium perborate. The oxygen bath thus obtained is said usually to reduce blood pressure and the pulse rate to a much greater extent than the ordinary bath. It is claimed to have marked tranquilizing and somnifacient effects. It is said to be useful in cardiac affections with high vascular tension and excitement, neuroses, insomnia, chronic nephritis, and skin diseases in which hydrogen dioxide is indicated.

Dosage.—One bath daily until 24 or 48 have been taken, with occasional intermissions.

Manufactured by Morgenstern & Co., New York. U. S. trademark 75,982. U. S. patent No. 969,073 (Aug. 30, 1910; expires 1927).

SODIUM PEROXIDE—Sodii Peroxidum.—Bioxydum natri (Pharm. Hispanola, edit. vii).

Sodium Peroxide is the sodium salt of hydrogen peroxide containing *at least 75 per cent.* Na_2O_2.

Sodium peroxide occurs in the form of a white, or yellowish, amorphous powder. It is soluble in water, with evolution of heat, and forms a solution of hydrogen peroxide, from which latter, oxygen is liberated by the heat of the reaction. It dissolves in cold dilute acids forming a solution of hydrogen peroxide. When heated sodium peroxide becomes darker, but on cooling resumes its original color. It does not react with alcohol, but it ignites ether on contact. A mixture with red phosphorus explodes under pressure or on being struck. It is an extremely powerful oxidizing agent.

Sodium peroxide should not respond to tests for sulphates, chlorides, phosphates, nitrogen and heavy *metals.*

Action and Uses.—Sodium peroxide is not used internally but has been used in acne, applied in the form of a paste prepared with liquid paraffin, or as a *soap to remove comedones.*

It has been suggested as an air purifier, based on the theory that the moisture of the air would liberate oxygen and the alkali simultaneously formed would absorb carbon dioxide.

Proprietary Preparation:

OXONE.—Oxone is a name applied to fused sodium peroxide containing a fractional percentage of a catalytic agent. It is said to yield its entire content of available oxygen in gaseous form, upon contact with water.

Manufactured by the Roessler & Hasslacher Chemical Co., New York. U. S. patent No. 788,256 (April 25, 1905; expires 1922). U. S. trademark *No.* 46,673.

SOLUTION OF FORMALDEHYDE

Solution of Formaldehyde is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physician's Manual of the Pharmacopeia and National Formulary.

FORMALIN.—A name applied to *Liquor Formaldehydi,* U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. trademark No. 65,625.

SOPHOL.—Sophol is a compound of silver and methylennucleinic acid, the silver being in organic ("masked") form.

It is prepared by conversion of *insoluble silver* compounds of methylennucleinic acid into soluble silver *compounds* by treatment with neutral salts, such as chloride of sodium. Sophol is a yellowish powder, having a *metallic* taste and claimed to contain silver, equivalent to *not less than 20* per cent. metallic silver. Sophol is readily soluble in water, the aqueous solution having a faint alkaline reaction; it does not give a precipitate on the addition of dilute solution of sodium hydroxide or of sodium chloride; it is insoluble in ether and alcohol.

If 0.3 Gm. sophol is heated in a test-tube [illegible] [illegible] urs with the development of brownish-red [illegible] [illegible] If the ash is treated with dilute nitric acid, [illegible] [illegible] a white cheesy precipitate is formed on *addition of* hydrochloric acid, which dissolves in ammonia water.

If 0.5 Gm. sophol is boiled with 5 Cc. *of sodium* hydroxide solution, the latter assumes a black color with the development of a formaldehyde odor.

If 0.1 Gm. sophol is heated with 3 Cc. nitric acid, a dirty yellow precipitate is formed, disappearing on addition of an excess of ammonia water with the formation of an orange colored solution.

A solution of 0.5 Gm. sophol in 10 Cc. water should have a faintly alkaline reaction and should not at once become turbid on the addition of sodium chloride solution.

If 1.0 Gm. sophol is shaken with 10 Cc. of alcohol and filtered, the filtrate should not be changed on addition of hydrochloric acid.

Actions and Uses.—It is said to act as a germicide and to be free from irritating effects in the solutions ordinarily employed.

It is said to be especially useful for the prevention and treatment of ophthalmia neonatorum and may be employed *in* other eye affections and for the *general indications* of the silver salts.

Dosage.—Sophol may be applied in from 2 to 5 per cent. solutions.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 852,545 (May 7, 1907; expires 1924). U. S. trademark No. 62,900.

SPIROSAL.—Spirosal is monoglycol salicylate, $C_6H_4OH.CO.O.CH_2.CH_2.OH = C_9H_{10}O_4$, the salicylic acid ester of monoglycol.

It is prepared by the action of ethyleneglycol on salicylic acid.

Spirosal is an almost odorless and colorless *oily fluid, with* a boiling point of 169° to 170° C. (336.2° to 338° F.) at 12 *mm.* pressure. It is easily soluble in alcohol, ether, chloroform and benzol and soluble in about 110 parts of water and 8 parts of olive oil.

Tests. 0.5 Gm. spirosal is saponified with 5 Cc. soda lye by slight warming, the clear fluid diluted with water and acidified with dilute sulphuric acid; fine crystalline needles of salicylic *acid are formed,* which *after being* extracted with ether and the latter then evaporated, can be identified by *the melting point* and ferric chloride reaction. The saturated watery solution *obtained* by shaking 1 Cc. spirosal with 50 Cc. of water gives *a filtrate,* which becomes intensely violet on addition of ferric chloride, but should not be changed by barium nitrate or silver nitrate; *0.5 Gm.* of spirosal *when added* to 2 Cc. of concentrated sulphuric acid should be given a light yellow and not a brownish color; 0.3 Gm., if incinerated on platinum foil, *should* not leave any weighable residue.

Actions and Uses.—Spirosal is said to be easily absorbed by *the skin* without causing irritation even when rubbed in thoroughly. It splits off salicylic acid *in the tissues.*

Spirosal is said to be useful for the external treatment of *rheumatic* affections.

Dosage.—It is used undiluted or mixed with 2 to 3 parts of alcohol or in a mixture with olive oil, 1 to 8, *or in ointments* with equal parts by *weight of petrolatum* or lard.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken of Elberfeld Co., New York.) U. S. patent No. 794,982 (July 18, 1905; expires 1922). U. S. trademark No. 62,856.

STOVAINE—Benzoyl-Ethyl-Dimethylaminopropanol Hydrochloride.—Stovaine is 2-benzoxy-2-methyl-1-dimethyl-amino butane hydro*chloride,* $CH_3.CH_2.C(C_6H_5COO)(CH_3)CH_2N(CH_3)_2.HCl = C_{14}H_{22}O_2NCl$. It is closely related to alypin (which see).

It is prepared by causing a reaction of benzoyl chloride on the *a*-dimethyl-amino-pentonal-*b*, which is itself the product of reaction of ethylmagnesium *chloride on methy*laminoacetone.

It crystallizes *in small,* brilliant scales, which melt at 175° C. (347° F.). *It is extremely* soluble in water and easily in methyl alcohol and acet[illegible] arts of absolute alcohol for solution and [illegible] *n acetone.* It is quite stable and its s[illegible] *at 115°* C. (239° F.) without suffering [illegible]

The aqueous [illegible] to litmus, neutral to methyl orange. It is *precipitated by* all the alkaloidal reagents and is decomposed even by very dilute alkalies.

It is incompatible with alkalies *and all alkaloidal* reagents.

Actions and Uses.—Stovaine acts as a local anesthetic. It has about the same power as cocaine, but dilates the blood vessels, whereas cocaine contracts them. It is only ⅓ to ½ as toxic as cocaine. Stovaine also is said to exert a tonic action on the heart.

It is used as a local anesthetic; while most reports are favorable, one case of gangrene has been reported following the use of a 10 per cent. solution.

Dosage.—Internally, 0.002 Gm. (1/30 grain) pill form. Locally it may be used in the eye in 4 per cent solution and applied to other mucous membranes, as in laryngology, in from 5 to 10 per cent. solution. For hypodermic injections for local anesthesia it can be used in 0.75 to 1 per cent. solution.

nufactured by the Poulenc Frères Co., Paris, France (Parmele macal Co., New York). U. S. patent Nos. 829,262; 829,374 21, 1906; expires 1923); 828,846 (Aug. 14, 1906; expires). U. S. trademark No. 59,228.

PHANTHIN THOMS.—Strophanthin Thoms is a ne glucoside ($C_{30}H_{46}O_{12} + 9H_2O$), obtained from Stronthus gratus. It is identical with the ouabain obtained Ouabaio wood by Arnaud (the official strophanthin is thyl-ouabain ($C_{31}H_{48}O_{12}$).).

The light-brown dehaired seeds of strophanthus gratus are d pressed to free from oil. The oil free cakes thus formed are ken up and extracted with 96 per cent. alcohol. The alcohol distilled off on the water bath, leaving a residue, which is described as follows: It consists of several layers—an upper thin layer of oil, then an aqueous alcohol layer, followed by a yellowish brown mass of crystals, under which is a layer of a brown extract, from which an amorphous strophanthin can be isolated. The above mentioned crystals are freed from the mother liquor and recrystallized from hot water. The seeds yield about 3.62 per cent. of crystallized strophanthin.

Colorless quadratic crystals of bitter taste and easily soluble in hot water. Soluble in 100 parts of cold water and 30 parts cold absolute alcohol and 30 parts amyl alcohol. It is slightly soluble in acetic ether, ether and chloroform. Its solubilities require further study. Solutions of 1 part of crystallized strophanthin in 100 parts of 95 per cent. alcohol have been frequently observed to deposit crystals on standing.

A solution of 0.01 gm. in 1 Cc. water run onto a layer of concentrated sulphuric acid colors the latter pink to red and the aqueous layer is colored a dirty green color.

Heated to 105° C. (221° F.), it loses 20 per cent. of water. The strophanthin thus dried melts at 187° to 188° C. (368.6° to 370.4° F.). Upon ignition no weighable residue should remain.

Heating with dilute hydrochloric acid or sulphuric acid produces hydrolytic cleavage, yielding a body which is identical with rhamnose.

Action and Uses.—Its pharmacologic action is probably qualitatively identical with that of the official strophanthus *or strophanthin, but the crystallized* is more than twice as active as the official strophanthin when injected subcutaneously or intravenously. The action of crystallized strophanthin appears to be identical with that of the purest preparation of strophanthin from Strophanthus Kombé; this action develops more rapidly, the drug is more quickly excreted, and shows less tendency to cumulative action than is the case with digitalis.

Strophanthin Thoms is used in place of strophanthus as a substitute for digitalis.

Dosage.—It is recommended in doses of 5 minims of a 1 per cent. solution by the mouth, *gradually increased by 1 minim* until the desired effect is obtained, which seldom requires more *than ten minims* (or *about one-tenth of* a grain of strophanthin). (H. Schedel, Arbeit a. d. Pharm. Inst. d. Universität, Berlin, II, 1904, p. 97). Single dose by mouth, 0.003 to 0.025 Gm. (1/20 to 2/5 grain); daily dose, up to 0.03 Gm. (½ grain). The larger doses are probably not absolutely safe. Intramuscularly or intravenously: The correct dose has not been accurately determined, but it appears to be one-half milligram (1/130 grain) or less for a single dose, and only one such dose should be given in a day as a rule. For intramuscular injection it should be dissolved in about 4,000 parts of distilled water, and even in that dilution it occasions some pain. *The intramuscular injection should be* repeated only by the physician himself.

SUBLAMINE—Mercuric Sulphate-Ethylenediamine.—Sublamine, $HgSO_4.2C_2H_4(NH_2)_2 + 2H_2O$, is a compound of one molecule of mercuric sulphate with two molecules of ethylenediamine (which see).

It forms white needles, readily *soluble* in water and in 10 parts of glycerin, sparingly soluble in alcohol. It has an alkaline reaction; it contains *about* 44 *per* cent. of mercury. It does not precipitate albumin from its solutions.

It is incompatible with sodium chloride and should not be exposed *to the air.*

Actions and Uses.—Sublamine is a disinfectant, similar to mercuric chloride, over which it has the advantage of being non-irritating, more penetrating and readily soluble.

It is used as a substitute for mercuric chloride for hand disinfection, as well as in *dermatology*, gynecology, ophthalmology and *otology*.

Dosage.—It is used *in* a 1:1,000 solution for skin disinfection and in 1:5,000 solution for irrigations of the bladder, etc. It may be used in syphilis by injection into the gluteal muscles of a 3 or 4 per *cent.* solution.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, *Berlin*, Germany (Schering & Glatz, New York). U. S. patent No. 726,126 (April 21, 1903; expires *1920*). *U. S.* trademark No. 37,736

SULPHANILIC ACID.—Acidum Sulphanilicum.—Acidum Sulfanilicum (Pharm. Helvetica, edit. 4).—Sulphanilic acid, $C_6H_4(NH_2)$ (HSO_3) 1:4, is para-amino-benzene-sulphonic acid.

Twenty-five Gm. colorless aniline are gradually added to 75 Gm. concentrated sulphuric acid in a 250 Cc. flask and the mixture warmed to 180° *to* 190° C. *(356° to 374° F.)*, under *agitation* for about three hours or until a drop of the mixture dropped into a solution of potassium hydroxide no longer gives indication of the presence *of aniline. At the end of the reaction* the mixture is poured into 500 Cc. *cold* water which precipitates the sulphanilic acid as a grayish crystalline powder; it is treated with animal charcoal and recrystallized *from* hot *water* (*Hager* 1, p. 116).

It occurs as colorless crystals slightly soluble in water, and insoluble in alcohol and ether. It is decomposed at 280° to 300° C. (536° to 572° F.). *It effloresces in air. It is soluble in* 182 parts water at 0° C. (32° F), and in 166 parts water at 10° C. (50° F.). It is not altered by boiling alkali, but fusion with alkali decomposes it, *yielding aniline. Chromic acid mixtures* oxidize it to chinon. Permanganate oxidizes it to azo-benzene-sulphonic acid and an excess of this reagent to carbon dioxide, sulphuric acid, ammonia and oxalic acid. The *cold saturated* solution is not altered by hydrogen sulphide or barium chloride, but boiling with alkali should produce a visible change (Pharm. Helvetica, edit. 4). One Gm. of the *powdered acid treated with* 3 Cc. zinc chloride solution should not be darkened. It should leave no residue on ignition (Pharm Helvetica, edit 4).

Uses and Dosage.—Internally (of doubtful value) in chronic catarrh of the respiratory mucosæ, 0.5 to 2 Gm. (10 to 30 grains) three times a day. It may be rendered more soluble by sodium bicarbonate. Its most important use is in Ehrlich's diazo-reaction for typhoid urines.

Proprietary Preparation:

SOLOID NIZIN.—Tablets, each of which contains 0.13 Gm. (2 grains) of zinc sulphanilate, $Zn(C_6H_4(NH_2)SO_3)_2 + 4H_2O = Zn(C_6H_6O_3NS)_2 + 4H_2O$.

Actions and Uses.—Soloid Nizin is said to be an astringent and antiseptic. It is said to be useful in gonorrhea, in conjunctivitis *and* other eye *affections.*

Dosage.—One to three in 30 Cc. (one fluidounce) of water for urethral injection. One in 60 Cc. (2 fluidounces) for an eye lotion.

Prepared by Burroughs, *Wellcome & Co., London, England,* and New York. U. S. trademark No. 287,163.

SULPHONMETHANE.

Sulphonmethane is official in the United States Pharmacopeia. For description see the pharmacopeia or the Physician's Manual of the Pharmacopeia and National Formulary.

SULPHONAL.—A name applied to Sulphonmethanum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 391,875 (expired).

SULPHONETHYLMETHANE.

Sulphonethylmethane is official in the United States Phar macopeia. For description see the *pharmacopeia* or the ician's Manual of the Pharmacopeia and National Forn

TRIONAL.—A name applied to Sulphonethylmeth U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New U. S. patent *No.* 396,526 (expired).

SULPHURATED POTASH—Potassa Sulphurata sulphuratum crudum—Hepar Sulfuris.—Sulphurated po a mixture of salts of potassium, of which the chief are po sium sulphides (Br. Pharm., p. 259).

It is prepared as follows: Mix the powdered and dried potassium *carbonate thoroughly with the sublimed sulphur,* and gradually heat the mixture, in a covered crucible. which *should be only* about half filled with it, until the mass ceases *to foam* and is in a state of perfect fusion. Then pour the fused mass on a cold marble slab, and, after it has cooled, break it into pieces, and keep it in a *well-stoppered bottle (U. S. P., 1890, p. 313).*

When freshly prepared, sulphurated potassa forms irregular pieces of a liver-brown color, which, by *exposure to the air*, gradually *absorb moisture, oxygen* and carbon dioxide, and change to a greenish-yellow and finally to a gray mass containing potassium carbonate, thiosulphate and sulphate. The compound has a faint odor of hydrogen sulphide, and a bitter, alkaline taste.

Soluble in 2 parts of water at 15° C. (59° F.), with the exception of a small residue. Alcohol dissolves only the potassium sulphide, leaving the other constituents (thiosulphate and sulphate) undissolved.

The aqueous solution (1 in 10) is of an orange-yellow color, is strongly alkaline to litmus paper, and gives off the odor of hydrogen sulphide.

On adding to it acetic acid in slight excess, an abundance of hydrogen sulphide is evolved, while sulphur is precipitated.

In this liquid, after filtration, sodium bitartrate test solution produces an abundant, white, crystalline precipitate (U. S. P., 1890, p. 213).

On triturating 1 Gm. of sulphurated potassa with 1 Gm. of crystallized copper sulphate and 10 Cc. of water, and filtering, the filtrate should remain unaffected by hydrogen sulphide test solution, corresponding to at least 12.85 per cent. of sulphur combined with potassium to form sulphide (U. S. P., 1890, p. 813).

Actions and Uses.—Externally sulphurated potash acts as an irritant and softens the horny layers of the skin, acting especially on the hairs. Internally, it is a gastrointestinal irritant and is believed to be an alterative. In some cases it has produced severe poisoning from the amount of hydrogen sulphide evolved. It is employed externally[1] as a local irritant in various skin diseases and as a parasiticide.

TANNALBIN—Albuminis Tannas.—Tannate of Albumin.—Tannalbin is a compound of tannic acid and albumin thoroughly exsiccated.

It is prepared by precipitating 10 parts of a 10 per cent. solution of egg albumin with 6.5 parts of a 10 per cent. solution of tannic acid, washing the precipitate with water until the washings react only faintly with ferric chloride, drying it on porous tiles, powdering, and heating the product at 126° C. (258.8° F.) for six hours.

It is a light brown, odorless and tasteless powder, containing about 50 per cent. of tannic acid. It is practically insoluble in water or alcohol, but slowly soluble in alkaline fluids, which split it up into its constituents.

The filtrate obtained after shaking tannalbin with water should give, at most, a faint reaction with ferric chloride.

It is incompatible with alkaline liquids.

Actions and Uses.—Tannalbin is astringent. Being insoluble in the gastric juice, it becomes effective when it reaches the intestines, where it slowly splits off tannic acid. It does not produce gastric disturbance.

It is said to be useful in diarrhea, especially in that of children, and in phthisis.

Dosage.—1 to 4 Gm. (15 to 60 grains) in powder (or tablets) followed by water; infant doses, 0.3 to 0.5 Gm. (5 to 8 grains) in gruel or other mucilaginous liquid.

Manufactured by Knoll & Co., Ludwigshafen a. R., Germany, and New York. U. S. patent No. 563,479 (July 7, 1896; expires 1913). U. S. trademark No. 28,348.

TANNIGEN—Acidum Tannicum Diacetylicum.—Diacetyl-Tannin.—Tannigen is tannyl acetate, $C_{14}H_8(C_2H_3O)_2O_9 = C_{18}H_{14}O_{11}$, the acetic acid ester of tannin.

It is prepared by heating tannin and acetic anhydride, in molecular proportions, in the presence of glacial acetic acid in a flask under a reflux condenser, pouring the product of the reaction into water, washing the precipitate produced with warm water, drying and powdering.

It is a light-gray, almost odorless and tasteless powder, which undergoes no change when heated alone, even to 180° C. (356° F.), but softens when heated in water at 50° C. (122° F.). It is practically insoluble in cold water, scarcely soluble in hot water, but soluble in alcohol, and also in solutions of borax, sodium [illegible] bonate, lime, etc., being reprecipitated from [illegible] cids. It is rapidly saponified by boiling [illegible] hydroxide solutions, or gradually in the cold, into acetic and gallic acids, while ammonia produces acetic and tannic acids.

Its aqueous solutions produce with ferric salts a green color, instead of the blue-violet color characteristic of tannic acid. A slightly alkaline solution in [illegible] its all the characteristics of an astringent [illegible], but these properties are destroyed by borax or more alkali.

It is incompatible with alkalies and with salts of iron; it should not be exposed to heat or moisture.

Actions and Uses.—Tannigen passes unchanged into the intestine, where it becomes effective as an astringent in contact with the alkaline juice. It is said to be free from irritant action. (See note under Cresosote Carbonate.)

It is said to be useful in acute diarrheal affections, such as acute intestinal catarrhs, cholera morbus, cholera infantum and dysentery; it has also been used with reported success for the diarrhea of typhoid fever and intestinal tuberculosis.

Dosage.—0.2 to 0.7 Gm. (3 to 10 grains) four times per day, dry on the tongue followed by a swallow of water; or mixed with food, avoiding warm or alkaline liquids.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York.) U. S. patent No. 533,718 (Feb. 5, 1895; expires 1912). U. S. trademark No. 17,668.

TANNISMUTH—Bismuthi Bitannas.—Bitannate of Bismuth. Tannismuth is the bismuth salt of tannic acid in which approximately one atom of bismuth is combined with two molecules of tannic acid having approximately the formula Bi (OH) $(C_{14}H_9O_9)_2$ and containing between 17 and 21 per cent. bismuth.

It is a light yellow powder with slightly astringent taste, insoluble in water, soluble in cold caustic alkalies, and in diluted hydrochloric acid.

Actions and Uses.—It is claimed that one molecule of the tannic acid becomes operative immediately after ingestion, while the other is slowly separated and prolongs the astringent action throughout the entire length of the alimentary canal.

It is said to be useful in chronic intestinal catarrh, involving different portions of the intestinal tract.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) three to five times daily.

Manufactured by Chemische Fabrik von Heyden, Radebeul near Dresden, Germany (The Heyden Chemical Works, New York). Not patented in the United States. German patent No. 172,933. U. S. trademark No. 36,916.

TANNOFORM — Tanninformaldehydum. — Tanninformaldehyde—Methylenditannin—Tannoform, $CH_2(C_{14}H_9O_9)_2 = C_{29}H_{20}O_{18}$, is a condensation product of formaldehyde with gallo-tannic acid.

It is prepared by mixing solutions of formaldehyde and tannic acid, precipitating with concentrated hydrochloric acid, washing the precipitate with water, and drying.

It forms a voluminous, reddish powder, odorless and tasteless. It is insoluble in water, but soluble in alkaline liquids and in alcohol. 0.01 Gm. of tannoform dissolved in 2 Cc. concentrated sulphuric acid forms a brown solution which on warming becomes green and later changes to blue. The green or blue solution, on addition of alcohol, assumes a brilliant blue color, which gradually changes to wine color, while on addition of dilute sodium hydroxide the color is pale green.

Its incompatibilities are those of tannin generally.

Actions and Uses.—Tannoform is astringent and antiseptic. It is said to be useful an account of these properties in chronic intestinal catarrh and externally in hyperidrosis, bromidrosis, weeping eczema, ozena, etc.

Dosage.—0.25 to 0.5 Gm. (4 to 8 grains); externally, pure or in 25 to 50 per cent. triturations (with talc) as dusting powder, or as 10 per cent. ointment or soap.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). German patents Nos. 88,082 and 88,841.

TANNOPIN—Hexamethylene-Tetramine-Tannin.—Tannon.—Tannopin, $(C_{14}H_{10}O_9)_3.CH_2)_6N_4 = C_{48}H_{42}O_{27}N_4$, is a condensation product of tannin with hexamethylenamine

It is prepared by mixing molecular proportions of solutions of hexamethylenamine and tannic acid, collecting, washing and drying the precipitate.

It is a fine, fawn-colored, odorless and tasteless, non-hygroscopic powder, containing 87 per cent. of tannin and 13 per cent. of hexamethylenamine. It is insoluble in water, weak acids, alcohol, chloroform or ether, but slowly soluble in dilute alkalies. On heating dry tannopin, it swells and gives off the odor of formaldehyde. The odor of formaldehyde is also developed on heating tannopin with dilute sulphuric or hydrochloric acid, while on boiling with sodium hydroxide solution it splits off ammonia. The clear aqueous filtrate from tannopin does not give a reaction with ferric chloride.

It is incompatible with alkalies.

Actions and Uses.—Tannopin has an astringent and antiseptic action in the intestine; it passes unchanged through the stomach, but, being gradually decomposed by alkalies, it becomes effective in the intestinal tract, exerting the action of its two components.

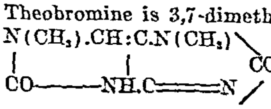
It is said to be useful in acute, subacute or chronic intestinal catarrh, in tuberculous enteritis, and other intestinal disorders.

Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for infants and children; 1 Gm. (15 grains) for adults, dry on the tongue, followed by a swallow of water, or sprinkled on food, four times a day.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 607,172 (July 12, 1898; expires 1915). U. S. trademark No. 31,527.

THEOBROMINE AND THEOBROMINE COMPOUNDS.

***THEOBROMINE*—Theobromina. — 3,7-Dimethyl-Xanthine.**—Theobromine is 3,7-dimethyl xanthine,



$$\begin{array}{l} N(CH_3).CH{:}C.N(CH_3) \\ | \qquad\qquad | \\ CO — NH.C = N \end{array} \Big\rangle CO$$

$= C_7H_8O_2N_4$, a base occurring in

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[1] In view of the uncertainty of the composition of sulphurated potash and of the fact that it sometimes exerts a poisonous action, it is deemed suitable only for external use.

Theobroma cacao, Kola acuminata, etc., and also made synthetically. Theobromine is closely related to caffeine (1,3 7 trimethyl xanthine).

It is a white, crystalline powder, odorless and bitterish. It is almost insoluble in cold water or chloroform, readily soluble in hot alcohol and in ether. *It forms salts with acids.*

Actions and Uses.—Its uses are similar to those of caffeine, but its action is said to be relatively *greater on the heart and* muscles and also as a diuretic. It does not act so powerfully on the central nervous system.

It is used as a diuretic. The great obstacle to its use has been its insolubility and the consequent uncertainty of the degree of its absorption. It is liable to produce gastric disturbances.

Dosage.—0.35 to 0.5 Gm. (5 to 8 grains).

AGURIN — Theobrominæ Sodio-Acetas. — Theobromine-Sodium-Acetate.—Agurin, $NaC_7H_7N_4O_2 + NaC_2H_3O_2$, is a double salt of sodium acetate and theobromine-sodium.

It is prepared by adding to a solution of one molecule of sodium hydroxide one molecule of theobromine. To this solution of sodium theobromine one molecule of sodium acetate is added and the solution brought to dryness.

It is a white, finely crystalline powder, containing 60 per cent. of theobromine. It is freely soluble in water, not very readily soluble in cold, more so in hot, alcohol. It is quite hygroscopic, and in watery solutions gradually splits up into its components, and more readily in the presence of carbon dioxide.

It is precipitated and decomposed by carbon dioxide and by acids; it forms a bluish white precipitate with silver nitrate, a blue precipitate with copper sulphate, white with tartar emetic, red-brown with ferric salts. It is not readily precipitated by Mayer's reagents, nor by iodine.

It is incompatible with carbonated beverages, acids, saccharine and mucilaginous liquids, and most of the alkaloid reagents.

Actions and Uses.—It acts like theobromine, over which it has the advantage of great solubility and that it is well tolerated by the stomach. While inferior in diuretic power to theophyllin (which see), it is said to have greater power in sustaining the diuresis produced.

Dosage.—0.5 to 1 Gm. (7 to 15 *grains*), *preferably in* wafers *or capsules. If in solution, this should be freshly pre*pared (with peppermint water) and without sugar or mucilage.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. trademark.

Tablets Agurin, 5 grains. Each tablet contains agurin 0.33 Gm. (5 grains).

THEOBROMINE SODIUM SALICYLATE — Theobrominæ Sodio-Salicylas.—Theobromine sodium salicylate, $NaC_7H_7N_4O_2 + NaC_7H_5O_3$, is a double salt of theobromine-sodium and sodium salicylate. It is official in the German Pharmacopeia as *Theobrominum natrio-salicylicum.*

It is prepared by adding to a solution of one molecule of sodium hydroxide one molecule of theobromine. To this solution of sodium theobromine one molecule of sodium salicylate is added *and the solution brought to dryness.*

It is a white powder, odorless, having a saline taste, and containing 50 per cent. of theobromine. It is freely soluble in water, and, like "theobromine sodium-acetate" *(see Agurin) is readily* decomposed by exposure to carbon dioxide or by the action of acids. *It must* therefore be preserved in well-stoppered bottles.

The aqueous solution (1 to 5) is colorless, turns litmus paper blue and after acidification with acetic acid assumes a violet coloration on addition of ferric chloride solution. *From the solu*tion, hydrochloric acid precipitates salicylic acid, and, after a *time, also* theobromine, the precipitate being completely soluble in sodium hydroxide solution, but not in ammonia water. If 10 Cc. *of the solution*, rendered clear by the addition of sodium hydroxide solution, is shaken with 10 Cc. of chloroform, the chloroform when separated and evaporated should leave a residue not exceeding 0.005 Gm. for 1 Gm. theobromine sodium salicylate.

It is incompatible with acids, bicarbonates, borates, phosphates, ferric salts, hydrated chloral, etc.

Actions and Uses.—Its effects are the same as those of theo*bromine (which see), over* which it has the advantage of greater solubility.

Dosage.—1 Gm. (15 grains) five or six times a day. Its tendency to produce gastric irritation may be prevented by giving it in well-diluted solution, or, if preferred, in capsules or wafers, followed by water.

THEPHORIN—Theobrominæ Sodio-Formas. — Theobromine Sodium Formate. Thephorin is theobromine sodio-formate, $NaC_7H_7N_4O_2 + NaCHO_2 + H_2O$, a double salt of sodium formate and theobromine sodium.

It is prepared by dissolving 70.1 parts of theobromine sodium in 200 parts of water and adding to it a solution of 23.5 parts of anhydrous sodium formate in 50 parts of water, filtering the mixture, and evaporating to dryness on a steam bath or in vacuo.

Thephorin is a white, odorless powder having a saline bitter taste and is readily soluble in water producing an alkaline solution. From its aqueous solution the theobromine is precipitated by acetic acid. *In the filtrate formic* acid is indicated by the reduction of silver nitrate.

If an aqueous solution of thephorin be faintly acidulated with nitric acid, the filtrate should give no *precipitate with barium* chloride, nor with silver nitrate, nor with ammonia water and hydrogen sulphide.

Two Gm. thephorin are placed in a porcelain dish and dis*solved in 10* c.c. water with the aid of gentle heat. A few drops of phenolphthalein test solution are *placed* in the solution, neutralized with nitric acid, the faint alkaline reaction is again restored *by means of diluted ammonia*, the solution is then thoroughly stirred and, with frequent stirring, allowed to stand for three hours at ordinary temperature.

The resulting precipitate collected on a weighed filter of 8 cm. diameter, is dried at a temperature of 100 C.; it is then washed twice with cold water, using 10 Cc. *each time. The filter is* again dried at a temperature of 100 C. and weighed. The weight of the precipitate should amount to 1.2 Gm.

Actions and Uses.—Thephorin is said not to irritate the *stomach and acts as a powerful* diuretic, both on account of the theobromine which it contains and also from the action of sodium formate.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.5 Gm. (7½ *grains) two or three times a day in* the form of powder or as tablets.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 799,764 (Sept. 19, 1905; expires 1922). U. S. trademark No. 59,581.

Thephorin Tablets, 7 1/2 grains: Each tablet contains thephorin 0.5 Gm. (7½ grains).

UROPHERIN-B—Theobrominæ et Lithii Benzoas. — Theobromine and Lithium Benzoate—Uropherin Benzoate.—Uropherin-B is theobromine lithio-benzoate, $LiC_7H_7N_4O_2 + LiC_7H_5O_2$, a double salt of theobromine-lithium and lithium benzoate.

It is a white powder containing 50 per cent. of theobromine. It is soluble in 5 parts of water; it decomposes on exposure to light and air.

A solution of uropherin-B will respond to the various tests for lithium, theobromine and benzoate.

Actions and Uses.—It is a *diuretic, said to be particularly efficient in connection with digitalis.*

It is said to be useful in dropsy, nephritis and diseases of the heart and of the genitourinary organs.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in powder or capsules, followed by water.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark.

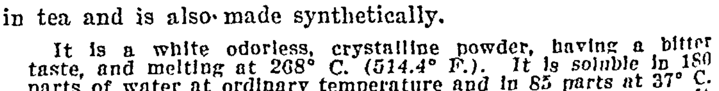
UROPHERIN-S—*Theobrominæ et Lithii Salicylas.*—Theobromine and Lithium Salicylate—Uropherin Salicylate.—*Uropherin-S is theobromine lithio-salicylate*, $LiC_7H_7N_4O_2 + LiC_7H_5O_3$, a double salt of theobromine-lithium and lithium salicylate.

Actions and Uses.—The properties, actions, uses and dosage of this compound are practically the same as those of "theobromine-lithium benzoate" (see Uropherin-B).

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. trademark.

THEOPHYLLINE AND THEOPHYLLINE COMPOUNDS.

THEOPHYLLIN—Theophyllina. — 1,3-Dimethyl-Xanthine.—Theophyllin is *1,3-dimethyl-xanthine*,



$$\begin{array}{l} N(CH_3).CO.C.NH \diagdown \\ | \qquad\qquad\quad \| \qquad\qquad CH + H_2O = C_7H_8O_2N_4 + H_2O, \\ CO.N(CH_3).C.N \diagup\!\!\diagup \end{array}$$

an organic base isomeric with theobromine; it is found in small amounts in tea and is also made synthetically.

It is a white odorless, crystalline powder, having a bitter taste, and melting at 268° C. *(514.4° F.). It is soluble in* 180 parts of water at ordinary temperature and in 85 *parts at* 37° C. (98.6° F.), sparingly soluble in alcohol, insoluble in ether. It forms easily soluble compounds with ammonium and potassium, a less soluble salt with sodium, but a freely soluble double salt with sodium acetate.

It responds to the murexid test. Addition of tannin to *a solution* of theophyllin produces a precipitate soluble in *an* excess of the reagent. It is soluble in an excess of sodium hydroxide solution (difference from caffeine). *On addition to solution* of theophyllin in sodium hydroxide of a solution of sulphanilic acid 0.5, hydrochloric acid 5.0, water 100, to which a few drops of a ½ per cent. solution of sodium nitrite *have been* added (diazo test), a red coloration is produced (distinction from caffeine and theobromine).

Actions and Uses.—Theophyllin has a diuretic action similar to that of caffeine *or theobromine* but is more effective. The diuretic effect, however, is not prolonged and its administration is, therefore, advantageously followed by one of the theobromine derivatives having a weaker, but more persistent, action. It occasionally produces gastric disturbances and renal irritation has also been reported. It is claimed that these may be obviated by the use of theophyllin sodio-acetate (which see) instead.

It is used in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains) in warm tea.

Proprietary Preparations:

THEOPHYLLIN (Boehringer) is prepared by transformation of uric acid.

Manufactured by C. F. Boehringer & Soehne, Mannheim, Germany. (Merck & Co., New York.) U. S. patent Nos. 667,381 (Feb. 5, 1901; expires 1918); 757,328; 757,329 (April 12, 1904; expires 1921).

THEOCIN:—A name applied to theophyllin manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). It is prepared by treating the monoformyl derivative of 1-3 dimethyl-4-5-diamido-2-6-dioxypyrimidin with alkalies. The alkaline salts of theophyllin thus produced are transformed into theophyllin by the action of acids.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken of Elberfeld Co., New York.) U. S. patent No. 716,994 (Dec. 30, 1902; expires 1919). U. S. trademark No. 39,135.

THEOPHYLLIN SODIO-ACETATE—Theophyllinæ sodio-acetas—*Theophyllin sodium-acetate* $C_7H_7N_4O_2Na + CH_3COONa + H_2O$, is a double salt of sodium acetate and 1, 3-dimethylxanthine-sodium (theophyllinsodium).

It is a white crystalline powder, containing about 60 per cent. of anhydrous theocin. It dissolves in about 20 parts of water at 25° C. (77° F.), but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theophyllin reinforced by the diuretic action of sodium acetate, and being more soluble, it is claimed to be more readily absorbed and to be better tolerated than theophyllin.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Proprietary Preparations:

ACET-THEOCIN SODIUM.—A name applied to Theophyllin-Sodio-Acetate.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken of Elberfeld Co., New York.) U. S. patent *No. 716.994 (Dec. 30, 1902; expires 1919).* U. S. trademark No. 39,135.

Acet-Theophyllin Sodium.—A name applied to Theophyllin-Sodio-Acetate.

Manufactured by C. F. Boehringer & Soehne, Mannheim, Germany (Merck & Co., New York). U. S. patent Nos. 667.381 (Feb. 5, 1901; expires 1918); 757,328; 757,329 (April 12, 1904; expires 1921).

THERMODIN — Phenacetin-Urethane. — Acetylparethoxy-*Phenyl-Urethane.*—Thermodin, $C_6H_4(OC_2H_5).(N(COOC_2H_5)(CH_3CO)) = C_{13}H_{17}O_4N$, is a compound of acetphenetidin (phenacetin) and ethyl carbamate (urethane). It is chemically related to acetphenetidin (phenacetin), but differs from the latter in that it contains the group $[N(COOC_2H_5)(CH_3CO)]$ in place of $(NH.CO.CH_3)$.

It is prepared by the action of ethyl chlorocarbonate on paraphenetidin by which parethoxyphenyl-urethane is formed which is converted into the acetyl compound by heating with acetic anhydride.

It forms colorless, odorless and tasteless crystals, melting at 86° to 88° C. (186.8° to 190.4° F.). It is practically insoluble in cold water (1:2600); soluble in 450 parts of boiling water.

If 0.5 Gm. of thermodin, 5 Cc. sulphuric acid, and 5 Cc. of alcohol are mixed and warmed gently, the odor of ethyl acetate is developed. A solution of 0.5 Gm. of thermodin in 5 Cc. of sulphuric acid on the addition of 0.2 Gm. of sucrose, assumes a red color, becoming more intense on standing (distinction from neurodin). If 0.5 Gm. of thermodin is boiled with 3 Cc. of hydrochloric acid during one minute, then mixed with 5 Cc. phenol solution 1:20, and a solution of chlorinated lime added, an onion red color appears which changes to blue on supersaturation with ammonium hydroxide. 0.1 Gm. of thermodin dissolved in 1 Cc. of sulphuric acid should form an almost colorless solution. 0.1 Gm. of thermodin should, on ignition, not leave a weighable residue.

Actions and Uses.—Thermodin is an analgesic, antipyretic and antiseptic.

It is recommended as a mild and reliable antipyretic in typhoid fever, pneumonia, influenza, tuberculosis and febrile conditions in general, and is said to be free from unpleasant by-effects. There is every *reason to believe, however,* that for use in these infectious diseases it is open to the same objection as the other derivatives of acetphenetidin and related products. (See Acetphenetidin.)

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) as an antipyretic; 1 to 1.3 Gm. (15 to 20 grains) as an analgesic.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). *U. S. trademark.*

THIGENOL.—Solution of Sodium Sulpho-Oleate, Roche.—Thigenol is a *solution* of the sodium salts of synthetic sulpho-oleic acids, containing 2.85 per cent. sulphur.

Precipitated sulphur is dissolved by boiling in the glyceride of oleic acid; the resulting solution is treated with sulphuric acid, during which process sulphurous acid escapes, and a sulpho-oleic acid is separated out. The separated sulpho-acid is then obtained by pouring *into water, and subsequently* washing thoroughly. By treatment with solution of sodium hydroxide, there results a solution of sodium sulpho-oleate, which is evaporated in vacuo until it has a specific gravity of 1.05 to 1.06.

Thigenol is a dark brown liquid, having a faint sulphurous odor. It is soluble in one or more parts of water, dilute alcohol, glycerin, *chloroform, oily or fatty* bases, with any one of which it mixes freely. When water is the vehicle employed, it should be distilled; hard water will cause a precipitate. Thigenol is incompatible with mineral acids or acetic acid.

Actions and Uses.—Thigenol is said to have the actions of sulphur. It is claimed to stimulate granulation, restrict secretions and to be antipruritic.

It is used in diseases of the uterus and its appendages and in skin diseases in which sulphur is commonly employed.

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains) in plain or sweetened water. Thigenol is used locally either in the pure state or mixed in any desired proportion with ointment bases, fats or glycerin according to the intensity of action required.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland. (The Hoffmann-LaRoche Chemical Works, New York). U. S. trademark No. 51,393. Not patented.

THIOL.—Thiolum.—Thiol is a water soluble mixture of sulphurated and sulphonated petroleum oils.

Thiol is *prepared* by heating certain *paraffin oils* with 10 per cent. of sulphur, by which a partial addition of the sulphur takes place. The thiol oil thus formed is then treated with sulphuric acid for sulphonization. The excess of sulphuric acid is washed out by water and the sulphonated product neutralized by ammonia and the solution freed by dialysis from all inorganic salts. The dialyzed product evaporated to dryness contains about 12 per cent. of sulphur. For therapeutic purposes the evaporation is not carried to absolute dryness but the product is marketed either in the form of a syrupy liquid (Thiol Liquid, see below) or as a powder (Thiol Dry, see below).

Thiol is a brown powder with a pleasant odor resembling Russia leather, having a somewhat bitter and slightly astringent taste. It swells up in water and finally dissolves. It is also soluble in alcohol and slightly soluble in ether.

Thiol should not markedly redden litmus paper.

Actions and Uses.—Thiol is said to have a drying, astringent, antiphlogistic, and disinfecting action. Taken internally it is said to favor digestion and defecation. It is said to be useful in skin diseases, especially in dermatitis, acne, eczema, erysipelas, erythema, furunculosis, herpes, pruritus, pityriasis, etc. It is also claimed to be useful in burns, in rheumatism and in certain diseases of women.

Dosage.—It may be applied locally in the form of liquid thiol in full strength or in solution with glycerin or water or in the form of ointment or a 2 per cent. solution of liquid thiol may be used as a spray. Internally it may be given in the form of dry thiol in the dose of 0.1 to 0.2 Gm. (1½ to 3 grains) three times a day. Dry thiol may be employed as a dusting powder, either alone or with 80 per cent. of starch or in the form of ointment or of paste.

Manufactured by J. D. Riedel Aktiengesellschaft, Berlin, Germany (Riedel & Co., New York). U S. trademark 16,553.

Thiol Dry.—Thiolum Siccum.—Thiol Dry is a brown powder with properties corresponding to the description of thiol, containing from 8 to 9 per cent. of sulphur.

Actions, Usage and Dosage.—See Thiol.

Thiol Liquid.—Thiolum Liquidum.—Thiol liquid is a preparation of thiol containing about 1.8 to 2 per cent. of sulphur.

It is a dark brown *neutral liquid of a* not unpleasant smell resembling that of Russian leather It is easily soluble in water and glycerin but only slightly soluble in ether.

Actions, Uses and Dosage.—See Thiol.

THIOSINAMINE AND THIOSINAMINE COMPOUNDS.

THIOSINAMINE—Thiosinamina.—Allyl Sulphocarbamide—Allyl Thiourea—Rhodaline.—Thiosinamine is allyl-thio-urea, $(NH_2).CS.NHCH_2.CH:CH_2 = C_4H_8N_2S$.

It is prepared by warming together volatile oil of mustard (chiefly allyl thiocyanate) and alcoholic solution of ammonia, collecting the crystalline product of condensation, and recrystallizing from alcohol.

It forms colorless crystals, having a slight alliaceous odor and bitter taste and melting at 74° C. (165.2° F.). It is moderately soluble in water, but is decomposed by this solvent. It is soluble in about 3 parts of alcohol and readily soluble in ether.

It is incompatible with water, which decomposes it, but this change is to a limited extent prevented by the presence of glycerin.

Actions and Uses.—Thiosinamine appears to cause or quicken the absorption of exudates, lymphatic swellings, scar tissue, etc., the action being unexplained. The opinions as to its value are contradictory.

It is used by hypodermic injection in lupus, chronic glandular tumors, cicatrices, etc. By the mouth in stricture, corneal opacity, chronic deafness.

Dosage.—0.03 to 0.1 Gm. (½ to 1½ grains) in capsules or tablet triturates; in subcutaneous injections, 0.05 to 0.2 Gm. (1 to 5 grains) in 15 per cent. alcoholic or 10 per cent. glycerinated water solution.

SOLUTION THIOSINAMINE SODIUM SALICYLATE.—Liquor Thiosinaminæ Sodio-Salicylatis.—*A sterilized solution containing 15 per cent. of a double salt of thiosinamine and* sodium salicylate, $(NH_2.CS.NHCH_2.CH:CH_2)\ C_6H_4(OH)\ (COONa)$.

It is prepared by mixing the two compounds in solution.

It is an aqueous odorless solution. It does not keep well in the air, but is marketed in sealed, brown glass vials, each containing 2.3 Cc. (37 minims) of the solution, equivalent to 0.2 Gm. (3 grains) of thiosinamine.

The tests are those of thiosinamine and sodium salicylate.

Actions and Uses.—Those of thiosinamine, with the advantage of quicker absorption and freedom from pain or irritation, on account of its solubility and aqueous vehicle.

Dosage.—The contents of one vial (2.3 Cc. = 0.2 Gm. thiosinamin) by *subcutaneous, intramuscular or intravenous* injection; one injection being administered daily or every second or third day.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. *trademark* No. 49,160.

THORIUM NITRATE—*Thorii* Nitras.—Thorium nitrate, $Th\ (NO_3)_4 + 4H_2O$, *is the thorium salt of nitric acid.*

Thorium nitrate occurs as white *crystalline* granules or lumps. Very *soluble* in water and alcohol. On calcination yields a voluminous, white oxide, which should amount to 48-50 per cent. of the original salt. The aqueous solution dries over sulphuric acid to a crystalline mass.

An aqueous *solution gives* a white precipitate with ammonium carbonate, the precipitate being completely soluble in an excess of the precipitant. The aqueous solution gives with caustic alkalies a voluminous precipitate of the hydroxide insoluble in an excess of the precipitant. The presence of *tartaric acid* prevents the precipitation. Potassium ferrocyanide produces an amorphous precipitate.

Action and Uses.—The soluble thorium salts bear a close resemblance to alum in their local astringent and irritant properties. They are not absorbed from the alimentary canal. Hypodermically, they cause local sloughing, and intravenously, they kill by coagulating the blood. The non-precipitant double salts are practically non-toxic, even intravenously. They are excreted by the kidneys. Thorium salts are fairly radioactive. They have been recommended for local application in malignant diseases and thorium emanation has been inhaled in phthisis. Reliable evidence as to the therapeutic value of thorium salts is lacking.

Dosage.—A solution of thorium nitrate (1 to 5) is neutralized with ammonia, and allowed to stand in a bottle four-fifths full; the emanation that accumulates in the vessel is inhaled (Br. Codex).

THYMOL IODIDE.

Thymol Iodide is official in the United States Pharmacopeia. For description see the *pharmacopeia* or the Physicians' Manual of the Pharmacopeia and National Formulary.

ARISTOL.—A name applied to Thymolis Iodidum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. *trademark* No. 17,393.

THYRESOL.—Thyresol consists chiefly of the methyl ether of santalol, $C_{15}H_{23}OCH_3$. It is prepared *by the* action of sodium methylate on "santal oil chloride."

Thyresol is *a colorless liquid* of aromatic odor, almost insoluble in water; easily soluble in alcohol and ether; soluble in concentrated sulphuric acid with a reddish-brown color. Boils at 149-156° C. (300.2-312.8° F.) under pressure of about 16 mm. On heating with *hydriodic acid,* santalyl iodide and methyl iodide are formed.

Actions and Uses.—Similar to sandal wood oil, but said to be *practically* free from irritant effects on the stomach and *kidneys.*

It is said to be useful in acute and chronic gonorrhea, anterior and posterior, and other conditions in which the sandal wood oil preparations are indicated.

Dosage.—0.5 Gm. (8 grains) 3 to 4 times daily, best given in milk or gelatin capsules.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. (Farbenfabriken of Elberfeld Co., New York.) U. S. patent No. 909,541 (Jan. 12, 1909; expires 1926).

THYROID PREPARATIONS.

IODOTHYRINE—*Thyroiodine.*—*Iodothyrine* is a milk sugar *trituration of the active principle of thyroid gland,* 1 Gm. representing 1 Gm. of fresh gland and containing 0.0003 Gm. of iodine.

According to the patent specifications iodothyrine may be obtained by boiling the *fresh thyroid glands, freed from fat, with* dilute sulphuric *acid, cooling the liquid and collecting the body* which separates, dissolving the active portion in alcohol and evaporating to dryness. The product is further purified by washing with ether, which dissolves impurities. One part of the active ingredient is mixed with *309 parts of* sugar of milk.

It is a white or yellowish white powder, having the sweet taste of milk sugar.

Actions and Uses.—It is similar in action to Glandulæ Thyroideæ *Siccæ,* U. S. P., *but it is claimed to possess* the advantage *of more definite strength and absence of decomposable* extraneous matter.

Dosage.—Adults, 0.6 to 2 Gm. (10 to 30 grains); children, 0.3 to 1 Gm. (5 to 15 grains) per day.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). E. Merck, *Darmstadt* (Merck & Co., New York). *U. S. patent* No. 626,648 (June 6, 1899; expires 1916). U. S. trademark No. 29,406.

Iodothyrine Tablets, 5 grains. Each tablet contains iodothyrine 0.33 Gm. (5 grains).

TRIFERRIN—Triferrinum.—Triferrin is ferric paranucleinate; *a compound* of caseinparanucleinic acid with iron, containing 22 per cent. of iron, 9 per cent. of nitrogen and 2.5 per cent. of *phosphorus in natural (organic) combination.*

It is prepared by digesting cow's milk-casein with pepsin and precipitating the solution with a *ferric* salt.

It is a tasteless powder. It is soluble in weak solution of sodium hydroxide, but insoluble in weak hydrochloric acid (0.1 to 0.3 per cent.).

Actions and Uses.—In addition to its hematinic action derived from the iron, it is claimed to act like lecithin by reason of the phosphorus in organic combination which it contains. It is said to agree with very sensitive stomachs, since it *passes* the stomach unchanged but is freely absorbed in the intestines.

It is said to be useful in anemia, chlorosis, neurasthenia, rachitis and general *debility.*

Dosage.—0.3 Gm. (5 grains) in powder, taken during meals.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany, and New York (Knoll & Co., New York). German patent No. 114,-273. U. S. trademark No. 36,747.

Triferrol—*Liquor* Triferrini, Knoll.—Triferrol is an elixir of triferrin, said to contain 0.06 Gm. (1 grain) triferrin in 4 Cc. (1 fluidram). It contains 15 per cent. of alcohol.

A soluble form of *triferrin (soluble triferrin* Knoll), is dissolved in *a vehicle consisting of* water, alcohol, tincture of orange, tinct. cardamon co. and vanillin.

Dosage.—16 Cc. (4 fluidrams) corresponding to 0.24 Gm. (4 grains) of the powder.

TRIOXYMETHYLENE — **Paraformaldehydum.**—Paraformaldehyde.—Trioxymethylene, $(CH_2O)x$, is a polymeric condensation of formaldehyde.

It is prepared by concentrating an aqueous solution (40 per cent.) of *formaldehyde* by evaporation.

It is a white, crystalline powder, melting at 171° C. (339.8° F.). It is insoluble in alcohol or ether, but slowly soluble in water at ordinary *temperature,* more rapidly when heated, formaldehyde being regenerated as indicated by the vapors given off.

It responds to the tests for formaldehyde.

It has the same incompatibilities as *formaldehyde:* Bases, oxidizing agents, gelatin, tannin, etc.

Actions and Uses.—Antiseptic and escharotic. Externally it is used chiefly to generate formaldehyde by heating, for disinfection or for inhalations.

Dosage.—Internally, 0.3 to 1 Gm. (5 to 15 grains); externally (for warts), in 10 per cent. suspension in collodion.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). It is not patented or trademarked.

TRIPHENIN.—Propionyl-Phenetidin—Triphenin, $C_6H_4(OC_2H_5)NH(CH_3CH_2CO) = C_{11}H_{15}NO_2$, is a derivative of paraphenetidin, differing from acetphenetidin (phenacetin), $C_6H_4(OC_2H_5)NH(CH_3CO)$, in that the acetic acid residue, $(CH_3.CO)$, has been replaced by the propanoic acid residue, $(CH_3.CH_2.CO)$.

It is a white, shining, crystalline powder, melting at 120° C. (248° F.), odorless and faintly bitter. It is practically insoluble *in water, requiring 2,000 parts, but* soluble in alcohol and in ether.

It is prepared by heating paraphenetidin with propanoic acid
oduct.
s to the pharmacopoeial tests for acet-
From this it may be distinguished by
y identifying the propanoic acid evolved
when heated with 50 per cent. sulphuric acid.

Its incompatibilities are those of acetphenetidin (phenacetin.)

Actions and Uses.—Triphenin is antipyretic, analgesic and hypnotic, its action is slower and milder than that of phenacetin, because it is less soluble, and it is said to be free from by- or after-effects.

It has been recommended in typhoid, pneumonia, pleurisy, influenza, erysipelas and tuberculosis; also in neuralgia, sciatica, migraine, tabetic pains, etc. Like similar products, it must be used with caution, especially in the infectious fevers. (See Acetphenetidin.)

Dosage.—As an antipyretic, 0.25 to 0.6 Gm. (4 to 10) grains); as an antineuralgic, 1 to 1.3 Gm. (15 to 20 grains), preferably in wafers.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). *U. S. patent* No. 535,846 (March 19, 1895; expires 1912). U. S. trademark.

TROPACOCAINE HYDROCHLORIDE—Tropacocainæ Hydrochloridum.—Benzoylpseudotropeine Hydrochloride—Tropeine.—Tropacocaine hydrochloride, $C_8H_{14}NO(C_7H_5O.)HCl = C_{15}H_{19}NO_2.HCl$. is the hydrochloride of synthetic tropacocaine.

Pseudotropin-Lieberman is obtained from tropinon or from tropin by electrolytic reduction and *from this the benzoyl* derivative is obtained and this is converted to the hydrochloride.

It forms colorless, needle-shaped crystals, melting at 271° C. (519.8° F.). It is readily soluble in water, and its solution keeps well for several months. Heated in the presence of hydrochloric acid it is split into benzoic acid and tropine.

Its incompatibilities are the same as those of the alkaloids in general.

Actions and Uses.—Tropacocaine hydrochloride is a local anesthetic, resembling *cocaine very closely* in its general action, but only half as poisonous. It is reported that anesthesia sets in more rapidly and lasts longer than with cocaine. It produces less dilatation of the pupil, sometimes none at all. It is employed as a local anesthetic.

Dosage.—It is applied in 3 to 10 per cent. aqueous solutions containing 0.6 per cent. sodium chloride.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 628,293 (*July* 4, 1899; expires 1916).

UREA.—Urea, $CO(NH_2)_2 = CH_4ON_2$, is the diamide of carbonic acid.

Urea occurs as colorless transparent prismatic crystals almost odorless having a cooling *saline taste. It* is somewhat hygroscopic. It is soluble in water (1-1), more readily *in hot water. Soluble in alcohol (1-7) and (1-1)* in boiling alcohol. It is insoluble in ether and chloroform. *It fuses* at 132° C. (269.6° F.), evolving ammonia and ammonium cyanate. Kept at 150° C. (302° F.) for some time most of it is converted to biuret. If the temperature is raised to 170° C. (338° F.) the biuret evolves ammonia and is converted to cyanuric acid. Heated with water under pressure it is *decomposed into* ammonium carbonate. It is not alkaline, but is a weak base and though a diamide, forms salts like a *monacid* base; *these are acid to litmus. By hydrolysis it is* converted into ammonia and carbon dioxide. Nitric and oxalic acids produce precipitates when added to concentrated solutions of urea.

Action and Uses.—Urea is an active diuretic; it is rapidly eliminated and is not poisonous. It has been claimed, without convincing proof, to have the power of dissolving urinary calculi. It has been recommended in the treatment of tuberculosis, but this use of it is *generally* being abandoned. It may be employed where diuresis is indicated, though it appears irrational in primary renal disease.

Dosage.—0.5 to 4 Gms. (10 to 60 grains). Urea is given in solution, or *it* may be enclosed in cachets.

VALIDOL.—Validol is menthyl valerianate, $C_{10}H_{19}O.C_5H_9O$, the menthylester of valerianic acid, with 30 per cent. of free menthol.

It is prepared by heating a mixture of 16 parts of menthol and 12 parts of valerylchloride on a water bath until hydrogen chloride ceases to be given off, adding very dilute solution of sodium hydroxide, shaking out the mixture with ether, drying the ether-solution with potassium carbonate, distilling off the ether, *and rectifying the residual oily product* by vacuum distillation, finally dissolving 30 per cent. of free menthol in the pure ester so obtained.

Validol is a crystal-clear, colorless liquid, of the consistency of glycerin, having a mild and pleasant odor, distinct from either that of menthol or valerian, and a refreshing cool and very faintly bitter taste, insoluble in water, but readily soluble in alcohol, ether, chloroform, and oils. It is decomposed by alkalies. On warming with sodium hydroxide solution, the odor of menthol manifests itself; if then the alkaline solution is acidulated with diluted sulphuric acid, the odor of valerianic acid is developed. It is incompatible with alkaline media.

Actions and Uses.—Analeptic, antihysteric, carminative, stomachic; combining the activity of valerianic acid and of menthol. It is devoid of the irritating acridity of the latter and is said to be well tolerated by the most sensitive stomach.

It is said to be useful in hysteria, migraine, gastralgia, gastritis, vomiting of pregnancy, exhaustion, hypochondria, syncope and certain reflex neuroses.

Dosage.—10 to 15 drops, on sugar, or in a little sweet wine.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany (C. Bischoff & Co., New York).

VALIDOL CAMPHORATUM.—Validol camphoratum is camphorated Validol.

Camphorated Validol is a 10 per cent. solution of camphor in validol. Camphorated Validol is a clear, colorless liquid, of the consistency of glycerin, having an agreeable odor, and *refreshingly* cool and faintly bitter taste. It is insoluble in water, but readily soluble in alcohol, oils and other organic solvents. It is incompatible with alkaline media.

Actions and Uses.—Restorative, local analgesic, non-irritant and non-poisonous; well tolerated by the mucous membrane of the stomach. It is said to be useful in serious cases of exhaustion, where the administration of camphor is indicated; in odontalgia, either by application to the pulp or inserted on cotton into the previously rinsed cavity.

Dosage.—10 to 15 drops, on sugar or in wine.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany (C. Bischoff & Co., New York).

VALYL.—Valeryldiethylamidum.—Valerianic Acid Diethylamide.—Valyl is valeryl diethylamide, $C_4H_9CO.N(C_2H_5)_2 = C_9H_{19}ON$, a compound of valeric acid and diethylamine.

It is prepared by the direct interaction of its acid and basic components.

It is a bright, colorless, neutral liquid, having a peculiar pepper-like odor, boiling at 210° C. (410° F.). It is soluble in 25 parts of water and easily soluble *in alcohol* or ether.

It should be neutral to moistened litmus paper and the boiling point should not vary materially above or below that indicated.

It should not be exposed to the air.

Actions and Uses.—Valyl acts as a sedative, antispasmodic and nervine, similar to valerian.

It is said to be useful in hysteria, traumatic neurosis, hemicrania, neuralgia, menstrual irregularities, insomnia due to nervousness, etc.

Dosage.—Owing to the liability of valyl to oxidize when exposed to the air, it is supplied only in the form of pearls, each containing 0.125 Gm. (2 grains), the dose being 2 or 3 capsules, administered during or immediately after meals, or otherwise with a little milk.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoecht a. M., *Germany* (Victor Koechl & Co., New York). U. S. patent No. 697,730 (April 15, 1902; expires 1919).

VIOFORM. — Iodochloroxyquinolin. — Nioform. — Vioform is iodo-chlor-hydroxy-quinoline, $C_9H_4N.OH.I.Cl = C_9H_5ONClI$, a substitution compound of anachlor-orthohydroxy-quinoline, resulting from the introduction of one atom of iodine.

Hydroxy-quinoline is first chlorinated and dissolved in an alkaline solution, which is then *treated* with a solution of iodine in potassium iodide when a voluminous yellowish brown precipitate of vioform is produced. *This is washed* with a solution of sodium thiosulphate to remove free *iodine* and then with 1 per cent. hydrochloric acid until the dried residue melts at from 170° to 175° C. (338° to 347° F.).

It is a very voluminous, greenish yellow powder; crystallizing from glacial acetic acid in needles melting at 177° to 178° C. (350.6° to 352.4° F.), practically odorless, and insoluble in water and slightly soluble in alcohol; *it permits* sterilization without
s as bulky as iodoform.

Vioform contains 41.57 per cent. of iodine—it gives a green coloration with Millon's reagent or when the alcoholic solution is treated with ferric chloride solution. It dissolves with a brown color in concentrated sulphuric acid and the solution evolves iodine on warming. If this solution, after driving off the iodine, be diluted with water, chlorine can be demonstrated by the usual test with silver nitrate. If a solution of vioform *in chloroform is shaken with nitric acid, the chloroform acquires* a violet red color, and the nitric acid becomes somewhat yellow.

Actions and Uses.—It is antiseptic, hemostatic, cicatrisant; non-toxic and non-irritant. It is claimed to be an ideal substitute for iodoform and to prevent decomposition in wound secretions to a much higher degree. Drains and tampons may be left *in situ* for a considerable time.

Dosage.—As a dusting powder and as an ointment spray, suppository, or in form of gauze.

Manufactured by Baseler Chemische Fabrik, Basel, Switzerland (C. Bischoff & Co., New York). German patent No. 117,767.

Vioform Gauze.—Gauze impregnated with a solution of 10 Gm. (150 grains) of vioform, 50 Gm. (750 grains) of absolute alcohol, 10 Gm. (150 grains) of sugar, 25 Gm. (375 grains) of glycerin, and 500 Gm. (1 1/12 pints) of water.

XEROFORM—Bismuthi Tribromphenolas.—Tribromphenol-Bismuth.—Xeroform is basic bismuth tribrom-phenolate, $Bi(C_6H_2Br_3O)_2OH.Bi_2O_3 = C_{12}H_5O_6Br_6Bi_3$, *containing nearly 50 per* cent. of Bi_2O_3.

According to the patent it is *obtained by dissolving* tribromphenol in sodium hydroxide and adding bismuth nitrate to the sodium tribromphenolate solution. The precipitated tribromphenol bismuth is collected, and washed with alcohol.

It is a fine yellow, nearly odorless and tasteless powder, neutral in reaction, *and unaffected by light. It is insoluble in* water, alcohol, chloroform, liquid petrolatum and vegetable oils, but soluble in 2 per cent. hydrochloric acid in the proportion of 30:100. By alkalies it is decomposed with the formation of bromides; it is not decomposed by heat at temperatures below 120° C. (248° F.), and therefore may be sterilized.

It should yield 49.5 per cent. of bismuth oxide. If 1 Gm. is boiled with sodium hydroxide T. S. filtered, the filtrate rendered *acid* with sulphuric acid and the white, curdy precipitate washed and dried, it should melt at 95° C. (203° F.) (tribromphenol).

It is incompatible with alkaline media and should not be heated above 120° C. (248° F.).

Actions and Uses.—Xeroform is claimed to be non-irritant and non-toxic antiseptic. It is said to be useful as an odorless and efficient substitute for iodoform; as valuable in *ulcus cruris* and all weeping eczemas; internally, in gastrointestinal catarrh, proctitis, dysentery, bacillary and choleraic diarrhea, cholera infantum, etc. (See note under Creosote Carbonate.)

Dosage.—1 to 3 Gm. (15 to 45 grains) per day to adults; 0.12 to 0.3 Gm. (2 to 5 grains) at a dose to children. Externally, as a dusting powder, in bandages, etc., like iodoform.

Manufactured by the Heyden Chemical Works, New York. U. S. patent No. 516,358 (March 13, 1894; expires 1911).

ZINC PERMANGANATE.—Zinci Permanganas.—Zinc permanganate, $Zn\ (Mno_4)_2 + 6H_2O$ is the zinc salt of permanganic acid. It should contain *not less than 90* per cent. *of zinc* permanganate.

Zinc permanganate occurs in dark brown, nearly black, lustrous deliquescent crystals, or crystalline masses. It is readily soluble in water (1 in 3), generally leaving a slight residue. Aqueous solutions decompose in air, but are permanent if kept in well-closed bottles, protected from light. When heated slowly it loses water of crystallization *(25.46 per cent.) and oxygen*, leaving a residue of zinc manganite. If heated quickly it gives off pink vapors, or more properly, a fine dust of manganese trioxid. Zinc permanganate gives up oxygen more easily than does the potassium salt, hence great care should be taken in bringing it in contact with easily oxidizable substances.

Zinc permanganate should be almost completely soluble in water. The color of the solution is discharged by alcohol, hydrogen sulphid, ferrous *sulphate*, *oxalic acid*, or hydrogen dioxid, especially if the solution is first rendered acid with sulphuric acid

Tests.—If 1 Gm. of the *salt is dissolved* in 50 Cc. of water and 5 Cc. of alcohol added, a colorless solution must be obtained after boiling and filtering; if a small part of the latter acidified with nitric acid is tested with silver nitrate T. S. for chlorid and with barium chlorid T. S. for sulphate, not more than traces of either should be indicated.

To estimate *its purity, 0.1 to 0.2 Gm. of* substance is weighed, dissolved in water, filtered through asbestos, the filtrate acidulated with 5 Cc. dilute sulphuric acid, warmed to about 60° C., treated with an excess of tenth-normal oxalic acid V. S., *and* the excess of oxalic acid determined by titration with N/10 potassium permanganate V. S. Each cubic centimeter of tenth-normal oxalic acid V. S. consumed indicates 0.0040842 Gm. zinc permanganate, $Zn(MnO_4)_2 + 6.H_2O = 408.42$.

Action and Uses.—Zinc permanganate resembles the potas*sium* salt in its oxidizing properties, but is more astringent. It is antiseptic. It is used chiefly in urethritis, either as an *injection* or as a urethral douche.

Dosage.—Locally 1 part to 4,000 (1 grain in 8 fluidounces). 1.3 Gm. zinc permanganate is equal in permanganate content to 1 Gm. potassium permanganate.

Non-Proprietary Preparations:

Zinc Permanganate, P-W-R.—Manufactured by the Powers-Weightman-Rosengarten Co., Philadelphia, Pa.

Zinc Permanganate, Merck.—Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).

Tablets Zinc Permanganate, 1 grain, Mulford.—Each tablet contains zinc permanganate 0.065 Gm. (1 grain). Prepared by the H. K. Mulford Co., Philadelphia, Pa.

'Soloid' Zinc Permanganate, 1/8 grain, B.-W. & Co.—Each tablet contains zinc permanganate 0.008 Gm. (⅛ grain). Prepared by Burroughs-Wellcome & Co., London and New York.

ZINC PEROXIDE—Zinci Peroxidum.—Zinc Peroxide is the zinc salt, ZnO_2, of hydrogen peroxide, containing an admixture of not more than 55 per cent. of zinc oxide.

Zinc peroxide occurs as a yellowish white voluminous powder; *tasteless*, *odorless*, *non-hydroscopic*, *antiseptic*, neither caustic nor irritant, and not more toxic than ordinary zinc oxide. It is insoluble in water, but gives to it a slight alkaline reaction; it is soluble in cold dilute sulphuric acid with evolution of oxygen and in dilute hydrochloric acid with liberation of chlorine. It gives all the reactions of peroxides, caramelizes sugar, disengages oxygen by the action of acids and in contact with living tissue. It is stable in the autoclave to 130° C. and at a dry heat to 150° C., *and thus may be readily sterilized. Heated to higher* temperature, it loses oxygen and forms zinc oxide. It should not respond to tests for calcium, magnesium, barium, sulphates, chlorides or carbonates.

0.2-0.3 Gm. zinc peroxide accurately weighed and added to 50 Cc. water and acidulated with 20 Cc. dilute sulphuric acid, should *require* for each 0.1 Gm. material used not less than 9.25 Cc. dilute tenth-normal permanganate solution to produce a permanent pink color.

Action and Uses.—Zinc peroxide is used in the extemporaneous preparation of hydrogen peroxide for wounds, chronic ulcers, etc. It may be applied as a dressing directly on wounds, etc., where it produces hydrogen peroxide *in situ*. For eczema and other skin diseases it is sometimes prescribed with half its weight of potassium iodide and *one-tenth* its weight of tartaric acid, the mixture liberating iodine on contact with moist surfaces.

Dosage.—It may be used as a dusting powder either alone or mixed with tannin, or in the form of gauze, or a 10 per cent. ointment.

Proprietary Preparation:

PEROXIDE ZINC SOAP—Sapo cum zinci peroxido.—Peroxide Zinc Soap is a soap containing 10 per cent. zinc peroxide, which see.

Actions and Uses.—It is said to be useful as a vehicle for employing zinc peroxide *in the treatment of skin diseases*.

Prepared by J. Eavenson & Sons, Camden, N. J., for the Roessler & Hasslacher Chemical Co., New York. U. S. patent No. 787,776 (April 18, 1905; expires 1922). No trademark.

APPENDIX.

An index to the proprietary articles, arranged under the names of the manufacturers or their agents, which, so far as known to the Council, comply with the rules, but which did *not possess sufficient originality* to be admitted to the body of the book (see Introduction to Official Rules of the Council, page 9).

Edward G. Binz Co., Los Angeles, Cal.

Eucaloids.—Gelatine capsules, each said to contain pure *oil of* eucalyptus 0.3 Cc. (5 minims).

Euca-Mul.—An emulsion of oil of eucalyptus in glycerin and honey, said to contain oil of eucalyptus 3.25 Cc. in 100 Cc. (15 minims in a fluid ounce).

Burroughs, Wellcome & Co., New York.

Enule Soap Compound.—A cocoa butter suppository weighing 2.52 Gm. (39 grains) and containing in each suppository curd soap and dry sodium sulphate 0.454 Gm. (7 grains) of each.

Tabloid Hypophosphites Comp.—Each tablet is said to contain: Sodium hypophosphite, 0.0084 Gm. (⅛ grain); potassium hypophosphite, 0.0084 Gm. (⅛ grain); iron hypophosphite, 0.0084 [illegible] hypophosphite, 0.0042 Gm. (1/16 [illegible] 0.0021 Gm. (1/32 grain); strych[illegible] m. (1/128 grain); calcium hypo[illegible] grain).

*Tabloid Coffee Mint.**—Each tablet said to contain: Sodium bicarbonate, 0.2 Gm. (3 grains); ammonium carbonate, 0.004 Gm.

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* This article and all others thus starred do not comply with the present rules of the Council. Having been accepted before the revision of the rules the Council decided to retain them for the present in the appendix.

(1/16 grain); extract of coffee (obtained by extracting roasted coffee with water, the percolate being evaporated, dried and powdered), 0.032 Gm. (½ grain); cerium oxalate, 0.016 Gm. (¼ grain); oil of peppermint to flavor.

G. W. Carnrick Co., New York.

*Antithermoline.**—Each 1000 Gm. is said to contain purified kaolin, 563 Gm.; boric acid, 2 Gm.; oil of eucalyptus, menthol and thymol, combined, 2 Gm.; and glycerine, 320 Cc. It closely resembles Cataplasma Kaolini, U. S. P.

Cloftlin Chemical Co., New York.

*Emulsion Cloftlin.**—Each 100 Cc. is said to contain calcium hypophosphite, 1.33 Gm. (6 grains in a fluidounce); manganese hypophosphite, 0.66 Gm. (3 grains in a fluidounce); glycerin, 10 per cent.; cod liver oil, 50 per cent. (by volume).

Eusoma Pharmaceutical Co., Cincinnati, O.

Mercuran.—It is stated to be a 50 per cent. mercurial ointment in which the benzoinated lard of the official ointment (Unguentum Hydrargyri U. S. P.) has been replaced by goose fat stearin. It is supplied in capsules containing about 4 Gm. (60 grains) each.

Louisville Pharmacal Works, Louisville, Ky.

Elixir Duozyma.—Elixir Pepsin, Diastase and Hydrastis, L. P. W. A mixture said to represent in each 100 Cc.: pure scale pepsin (1:3000) 2.2 Gm. (10 grains in a fluidounce); malt diastase 0.22 Gm. (1 grain in a fluidounce); golden seal 0.22 Gm. (1 grain in a fluidounce); glycerin, C. P., 10 Cc. (48 minims in a fluidounce) and alcohol 15 per cent.

Malt-Diastase Co., New York.

Maltzyme.—A preparation essentially equivalent to Extractum Malti U. S. P. and containing 7 per cent. of alcohol. U. S. trademark No. 46,459.

Maltzyme with Cod Liver Oil.—Said to consist of maltzyme concentrated and brought back to its original volume by the addition of 25 per cent. of Lofoten cod liver oil.

Maltzyme with Cascara Sagrada.—Each 100 Cc. is said to represent cascara bark, 10 Gm. (48 grains in a fluidounce).

Maltzyme with Hypophosphites.—Each 100 Cc. is said to contain calcium, sodium, and potassium hypophosphites, of each 0.4 Gm. (2 grains in a fluidounce) and iron and manganese hypophosphites, of each, 0.05 Gm. (¼ grain in a fluidounce).

Maltzyme with Phosphate of Iron, Quinine and Strychnine.—Each 100 Cc. is said to contain iron pyrophosphate, 0.85 Gm. (4 grains in a fluidounce); quinine, 0.20 Gm. (1 grain in a fluidounce); strychnine, 0.0066 Gm. (2/75 of a grain in a fluidounce).

Maltzyme Ferrated.—Each 100 Cc. is said to contain iron pyrophosphate, 1.65 Gm. (8 grains in a fluidounce).

Maltzyme with Yerba Santa.—Each 100 Cc. is said to represent yerba santa leaves, 6.6 Gm. (30 grains in a fluidounce).

The Maltine Company, Brooklyn, N. Y.

Maltine.—A preparation essentially equivalent to Extractum Malti U. S. P. and containing 3.88 per cent. alcohol. U. S. trademark No. 44,536.

Maltine with Cascara Sagrada.—Each 100 Cc. is said to represent casgara sagrada (Rhamnus Purshiana) 12.5 Gm. (60 grains in a fluidounce) in a mixture containing maltine 96.115 per cent. and alcohol 3.885 per cent.

Maltine with Cod Liver Oil.—A liquid said to represent maltine, 56.115 per cent.; glycerin, 10 per cent.; cod liver oil, 30 per cent.; alcohol, 3.885 per cent.

Maltine with Creosote.—Each 100 Cc. is said to represent beechwood creosote, 0.83 Cc. (4 minims in a fluidounce) in a mixture containing maltine, 96.115 per cent., and alcohol, 3.885 per cent.

Maltine Ferrated.—Each 100 Cc. is said to represent iron pyrophosphate 1.65 Gm. (8 grains in a fluidounce) in a menstruum containing maltine, 96.115 per cent., and alcohol, 3.885 per cent.

Maltine with Hypophosphites.—Each 100 Cc. is said to contain calcium hypophosphite, 0.64 Gm. (3 grains in a fluidounce), sodium hypophosphite, 0.64 Gm. (3 grains in a fluidounce), and iron hypophosphite, 0.42 Gm. (2 grains in a fluidounce), dissolved in a solution of ammonium citrate and to contain maltine, 96.115 per cent., and alcohol, 3.885 per cent.

Maltine with Olive Oil and Hypophosphites.—A preparation said to consist of maltine, 65 per cent.; pure olive oil, 25 per cent.; glycerin, 10 per cent.; to which per 100 Cc. there is added calcium hypophosphite, 0.6 Gm. (3 grains per fluidounce); sodium hypophosphite, 0.6 Gm. (3 grains per fluidounce).

Maltine with Phosphate of Iron, Quinia and Strychnia.—Each 100 Cc. is said to represent iron pyrophosphate, 0.83 Gm. (4 grains in a fluidounce); quinine sulphate, 0.21 Gm. (1 grain in a fluidounce); strychnine (alkaloid), 0.0066 Gm. (2/75 grain in a fluidounce) dissolved in a solution of ammonium citrate and to contain maltine, 96.115 per cent., and alcohol, 3.885 per cent.

Maltine with Wine of Pepsin.—A liquid said to consist of maltine, 27.5 per cent.; wine of pepsin, 71.5 per cent.; and fluid extract of gentian, 1 per cent., the percentage of alcohol in the mixture being 18 per cent.

Malto-Yerbine.—A liquid said to contain in each 100 Cc. an extract of 6.6 Gm. (30 grains in a fluidounce) of eriodictyon (Yerba Santa), also flavoring composed of the essential oils of anise, cassia, coriander and caraway in a mixture containing maltine, 96.115 per cent. and alcohol, 3.885 per cent.

The extract of Yerba Santa employed in Malto-Yerbine is prepared as follows:

The leaves of Yerba Santa in coarse powder are boiled under pressure for six hours and inert matter separated by a filter press. The filtrate is concentrated with a certain quantity of maltine at a high temperature until the product has reached a density of 1.35. This extract is mixed in proper proportions with maltine of extra diastasic strength to make up for the diastasic strength lost through heat during the concentration of the drug with maltine.

Manhattan Eye Salve Co., Owensboro, Ky.

Argyrol Ointment (M. E. S. Co.)—An ointment said to consist of argyrol 10 per cent.; hydrous wool fat, 25 per cent.; white petrolatum, 65 per cent. Put up in collapsible tubes, for application to the eye.

Compound Yellow Oxide and Adrenalin Ointment (M. E. S. Co.)—An ointment said to contain yellow oxide of mercury 1 per cent., solution of adrenalin chloride 5 per cent., menthol 0.04 per cent., phenol 0.2 per cent., hydrous wool fat 25 per cent., white petrolatum sufficient to make 100 per cent. Put up in collapsible tubes, for application to the eye.

Cocaine and Adrenalin Ointment (M. E. S. Co.)—An ointment said to contain cocaine hydrochloride 2 per cent., solution of adrenalin chloride 17 per cent., hydrous wool fat 25 per cent., white petrolatum sufficient to make 100 per cent. Put up in collapsible tubes, for application to the eye.

Dionin Ointment (M. E. S. Co.).—An ointment said to consist of dionin 5 per cent.; white petrolatum, 95 per cent. Put up in collapsible tubes, for application to the eye.

Holocain and Adrenalin Ointment (M. E. S. Co.).—An ointment said to consist of holocain 1 per cent.; adrenalin chloride, 4 per cent.; hydrous wool fat, 10 per cent.; white petrolatum, 85 per cent. Put up in collapsible tubes for application to the eye.

Wm. S. Merrell Chemical Co., Cincinnati, O.

*Akaralgia.**—A mixture each 100 Cc. of which is said to represent sodium sulphate, 25 Gm.; sodium salicylate, 8.33 Gm.; magnesium sulphate, 42.5 Gm.; lithium benzoate, 4.16 Gm.; tincture of nux vomica, 5 Cc. Each average dose of 2 drams is said to represent sodium sulphate 30 grains, sodium salicylate (Merrell) 10 grains, magnesium sulphate 50 grains, lithium benzoate 5 grains and tincture of nux vomica 6 minims.

Erpiol—Dr. Shrader.—Capsules stated to contain in each: Apiol, green (see Oleoresin of Parsley Seed), 0.31 Cc. (5 minims); Ergotin, Bonjean's process (see Purified Extract of Ergot), 0.065 Gm. (1 grain); Gossypin, resinoid, 0.195 Gm. (3 grains).

H. K. Mulford Co., Philadelphia, Pa.

*Blandine Comp.**—A liquid said to contain in each 100 Cc.: Camphor, 0.3 Gm. (1⅓ grains in a fluidounce); menthol, 0.04 Gm. (1/5 grain in a fluidounce); thymol, 0.04 Gm. (1/5 grain in a fluidounce); eucalyptol, 0.08 Gm. (2/5 grain in a fluidounce); oil of gaultheria, 0.33 Cc. (1½ minims in a fluidounce); hydrastine alkaloid, 0.005 Gm. (1/40 grain in a fluidounce) in a neutral, odorless mineral oil (liquid petroleum). U. S. trademark No. 51,647.

*Casca-Laxative.**—A liquid extract representing in each 100 Cc.: Cascara sagrada, 116.6 Gm. (540 grains in a fluidounce); senna, 58.3 Gm. (270 grains in a fluidounce); podophyllin, 0.16 Gm. (¾ grain in a fluidounce); in a menstruum containing 17 per cent. of absolute alcohol by volume with aromatics.

Compound Capsules of Glycerophosphates. Capsula glycerophosphatum composita.—Each capsule is said to contain: Terebene, 0.2 Cc. (3 minims); oil of sandalwood, 0.2 Cc. (3 minims); guaiacol, 0.06 Cc. (1 minim) calcium glycerophosphate 0.06 Gm. (1 grain) sodium glycerophosphate, 0.03 Gm. (½ grain); strychnine 0.00065 Gm. (1/100 grain); pure olive oil sufficient to make 10 minims.

They are soft, oval shaped capsules of a clear, yellow color, with a small compressed tablet containing the glycerophosphates and strychnine suspended in the oils.

Methyl-Santal.—Each capsule is said to contain: Methylene blue, 0.06 Gm. (1 grain); oleoresin of copaiba, 0.1 Cc. (1 3/5 minims); oleoresin of cubebs, 0.025 Cc. (2/5 minim); oil of sandalwood, 0.09 Cc. (1½ minims); oil of cinnamon, 0.013 Cc. (1/5 minim); oil of nutmeg, 0.005 Cc. (1/12 minim).

Granular Effervescent Sodium Sulphate (Glauber's Salt), Mulford.—A mixture said to contain in each 100 Gm.: Dried sodium sulphate, 40 Gm., with an effervescing mixture consisting of sodium bicarbonate, citric acid, tartaric acid, and sugar. Each heaping teaspoonful weighing about 75 grains is said to contain dried sodium sulphate, 30 grains.

Granular Effervescent Bromide and Acetanilide Compound, Mulford.—A mixture said to contain in each 100 Gm.: Sodium bromide, 5 Gm., acetanilide, 1.5 Gm., and saccharin, 0.014 Gm., with an effervescent base consisting of sodium bicarbonate, and citric and tartaric acids. Each heaping teaspoonful of this salt, about 100 grains, is said to contain about 1.5 grains acetanilide, about 5 grains sodium bromide, and about 1/70 grain of saccharin.

Granular Effervescent Caffeine and Sodium Bromide Compound, Mulford.—A mixture said to contain in each 100 Gm.: Sodium bromide, 5.45 Gm.; caffeine, 0.545 Gm.; and saccharin, 0.014 Gm., with an effervescent base consisting of sodium [illegible] citric and tartaric acids. Each heaping [illegible] about 92 grains, is said to contain about 5 [illegible] ½ grain, caffeine, and about 1/70 grain of saccharin.

Granular Effervescent Caffeine and Potassium Bromide, Mulford.—A mixture said to contain in each 100 Gm.: Potassium bromide, 2.3 Gm.; caffeine, 0.122 Gm.; and saccharin, 0.014 Gm., with an effervescent mixture consisting of sodium bicarbonate, and citric and tartaric acids. Each ounce is said to contain about 10 grains of potassium bromide, about 2 grains of caffeine, and about 1/16 grain of saccharin.

Granular Effervescent Carlsbad Salt (Artificial), Mulford.—A mixture said to contain in each 100 Gm.: Potassium sulphate, 0.35 Gm.; sodium chloride, 3.266 Gm.; sodium bicarbonate, 6.533 Gm., and sodium sulphate (dried), 8 Gm., with an effervescent base consisting of sodium bicarbonate, and citric and tartaric acids. Each heaping teaspoonful of the salt, about 90 grains, is said to contain about ⅓ grain of potassium sulphate, 3 grains of sodium chloride, 6 grains of sodium bicarbonate and 7 grains of sodium sulphate (dried).

Granular Effervescent Carlsbad Salt (Artificial) with Phenolphthalein, Mulford.—A mixture said to contain in each 100 Gm.: Potassium sulphate, 0.35 Gm.; sodium chloride, 3.266 Gm.; sodium bicarbonate, 6.533 Gm.; sodium sulphate (dried), 8 Gm., and phenolphthalein, 1.1 Gm., with an effervescent base consisting of sodium bicarbonate, and citric and tartaric acids. Each heaping teaspoonful of the salt will average about 90 grains and is said to contain about ⅓ grain of potassium sulphate, 3 grains of sodium chloride, 6 grains of sodium bicarbonate, 7 grains of sodium sulphate (dried) and about 1 grain of phenolphthalein.

Guaiacol Carbonate Comp.—Soft, elastic, soluble capsules, each of which is said to contain: Guaiacol carbonate, 0.09 Gm. (1½ grains); calcium hypophosphite, 0.03 Gm. (½ grain); ichthyol, 0.03 Gm. (½ grain), strontium arsenite, 0.00055 Gm. (1/120 grain), and olive oil sufficient to make 0.3 Cc. (5 minims). Trademark not registered.

National Pharmacy Co., Oakland, Cal.

Bismuthal.—A milky liquid, said to contain in 100 Cc. lac bismuthi citratis, 44 Cc.; pepsin, 3.30 Gm.; hydrochloric acid, 0.013 Gm.; lactic acid, 0.013 Gm.; glycerin, 40 Gm., and alcohol, 5 Cc.; cherry laurel water, 1.66 Cc.; Jamaica ginger, 0.26 Gm.; gum benzoin, 0.59 Gm. Each dose of 1 fluidram is said to contain approximately: Lac bismuthi citratis, 26 minims; pepsin, 2 grains; hydrochloric acid, 8/1000 grain; lactic acid, 8/1000 grain; glycerin, 24 grains; alcohol, 3 minims; cherry laurel water, 1 minim; Jamaica ginger, 1/6 grain; gum benzoin, ⅓ grain.

Lac bismuthi citratis contains 7.60 per cent. of anhydrous bismuth citrate. It is made by double decomposition between bismuth trinitrate and sodium citrate, decanting the supernatant liquid and washing the precipitate.

Pitman-Myers Co., Indianapolis, Ind.

Aromatic Cordial, P.-M. Co.—Aromatic cordial is a mixture said to contain in each 100 Cc.: Papain, 0.4 Gm., and lactic acid, 0.625 Cc. in a menstruum consisting of glycerin wine, aromatics, sugar, and 5 per cent. of alcohol. One fluidram is said to contain papain, ¼ grain, and lactic acid, 4/10 minim.

Elixir Buchu, Juniper and Acetate Potassium, P.-M. Co.—Each 100 Cc. is said to represent: Buchu, 16.6 Gm.; juniper berries, uva ursi, of each, 8.3 Gm.; potassium acetate, 5 Gm. Each fluidram is said to represent: Buchu, 10 grains; juniper berries, uva ursi, of each, 5 grains, and potassium acetate, 3 grains.

Oleum Ricini Dulce, P.-M. Co.—Castor oil to which has been added saccharin 0.07 Gm. in 100 Cc. (0.33 in a fluidounce) and aromatics; contains 2.5 per cent. alcohol.

Syrup Cannabis Compound.—Each 100 Cc. is said to represent: Cannabis indica, 1.66 Gm. (7½ grains in a fluidounce); heroin hydrochloride, 0.066 Gm. (⅓ grain in a fluidounce); chloroform, 0.83 Cc. (4 minims in a fluidounce); lobelia, 1.66 Gm. (7½ grains in a fluidounce); antimony and potassium tartrate (tartar emetic), 0.026 Gm. (⅛ grain in a fluidounce), with aromatics; alcohol, 10 per cent.

Tablets Acet-Phenetidin Compound, P.-M. Co.—Tablets, each stated to contain acet-phenetidin 0.23 Gm. (3½ grains); caffein, 0.016 Gm. (¼ grain) and sodium bicarbonate, 0.08 Gm. (1¼ grains).

Reinschild Chemical Co., New York.

Extractum Chinae Nanning.—A liquid extract of red chinchona said to contain cinchona alkaloids 5 per cent., cinchona tannins 7½-10 per cent., glycerine 30 per cent., water 55-57½ per cent.

Dosage.—1 to 1.25 Gm. (15 to 20 minims) three times a day.

_Regulin._*—A mixture of agar-agar in a dry form with extract of cascara sagrada representing 15 per cent. of an aqueous fluid extract of cascara sagrada.

Actions and Uses.—See Agar-agar. Regulin is used for the the treatment of habitual constipation.

Dosage.—From a teaspoonful to a tablespoonful once daily in stewed apples, mashed potatoes or similar food.

U. S. patent No. 896,807 (Aug. 25, 1908; expires 1925).

Russell & Lawrie, Tarrytown, New York.

_Lubraseptic._*—Lubraseptic is a jelly prepared from Chondrus (Irish moss) containing 2 per cent. boric acid and 0.067 per cent. formaldehyde.

The material is packed in screw cap metal tubes and sterilized by heat.

Dosage.—It is put up in collapsible tubes and it is suggested to reject the portion first expressed to make sure of the sterile condition of that used.

Schering & Glatz, New York.

_Tonols._*—Tonol is a name applied by E. Schering to identify the glycerophosphates of his manufacture. The following are mentioned: Calcium (or lime) tonol, Iron tonol, Lithium tonol, Magnesium tonol, Manganese tonol, Potassium tonol, Quinine tonol, Strychnine tonol. U. S. trademark No. 59,094.

_Duotonol._*—A mixture of equal parts of calcium tonol and sodium tonol. U. S. trademark.

_Quartonol._*—A name applied to a mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain: Lime tonol. 0.148 Gm. (2¼ grains), sodium tonol, 0.148 Gm. (2¼ grains); quinine tonol, 0.03 Gm. (½ grain), and strychnin tonol, 0.00032 Gm. (1/200 grain). U. S. trademark.

_Sextonol._*—A mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain: Lime tonol, 0.13 Gm. (2 grains); sodium tonol, 0.13 Gm. (2 grains); iron tonol, 0.03 Gm. (½ grain); manganese tonol, 0.015 Gm. (¼ grain); quinine tonol, 0.015 Gm. (¼ grain), and strychnine tonol, 0.00032 Gm. (1/200 grain). U. S. trademark.

Trikresol.—A liquid said to consist of: Orthocresol, 35 per cent.; metacresol, 40 per cent., and paracresol, 25 per cent. It closely corresponds to Cresol, U. S. P. U. S. trademark No. 65,624.

Schieffelin & Co., New York.

_Colalin Laxative._*—Tabella Colalinæ cum Extracto Rhamni Purshianæ, Crowell. Each tablet is said to contain colalin, 0.015 Gm. (¼ grain), powdered extract of cascara, 0.12 Gm. (2 grains), and podophyllin, 0.01 Gm. (1/6 grain).

Dosage.—One to three tablets on retiring or one after each meal.

_Elixir Eupncin._*—A preparation each 100 Cc. of which is said to contain: Heroin, 0.0325 Gm.; terpin hydrate, 1.625 Gm.; creosote, 3.75 Gm., in a menstruum containing 30 per cent. of alcohol, with glycerin and aromatic essential oils. Each dose of 2 fluidrams is said to contain: Heroin, 1/24 grain; terpin hydrate, 2 grains, and creosote, 5 grains. U. S. trademark No. 36,419.

_Hemoquinine._*—Each 100 Cc. is said to contain: So-called peptonate of iron (made by adding ammoniocitrate of iron to freshly prepared peptone of egg albumin), 7.2 Gm., and so-called peptonate of manganese, 1.8 Gm., together with: Quinine peptonate (equivalent to 0.5 Gm. of quinine sulphate). 1.0 Gm., and sodium arsenate, 0.266 Gm., in a menstruum containing 20 per cent. of alcohol with glycerin and aromatics. Each dose of 2 fluidrams is said to contain: Peptonate of iron, 8½ grains; peptonate of manganese, 2⅛ grains, peptonate of quinine, 1 grain, and sodium arsenate, 1/36 grain. U. S. trademark No. 38,512.

_Heromal._*—Each 100 Cc. is said to contain: Heroin, 0.01625 Gm. and sodium hypophosphite, 0.375 Gm., in a menstruum of malt extract, with 6 per cent. of alcohol. Each dose of 2 fluidrams is said to contain: Heroin, 1/48 grain, and sodium hypophosphite, ½ grain. U. S. trademark No. 37,010.

Heroterpine.—Each 100 Cc. is said to contain: Terpin hydrate, 1.625 Gm., and heroin, 0.0325 Gm., in a menstruum containing 32 per cent. of alcohol, with glycerin and aromatic essential oils. Each average dose of 2 fluidrams is said to contain: Terpin hydrate, 2 grains, and heroin, 1/24 grain. U. S. trademark No. 36,181.

Laminoids Ferruginous (Nascent).—Each tablet contains iron sulphate and sodium bicarbonate in quantities equivalent to those of pilulæ ferri carbonatis (Blaud's pills), but the two salts are separated into two layers so that the formation of ferrous carbonate will occur only when the tablets are moistened. An excess of bicarbonate is present. U. S. trademark No. 38,384.

_Neuronidia._*—An elixir said to contain in each 100 Cc.: Veronal (Diethyl-Barbituric Acid), 3.25 Gm. in a menstruum containing 35 per cent. of alcohol, with aromatics. Each dose of 2 fluidrams is said to contain veronal, 4 grains. U. S. trademark No. 44,141.

_Uriform._*—Each 100 Cc. is said to represent: Hexamethylenetetramine, 6.25 Gm.; saw palmetto, 4.16 Gm.; santal, 2.08 Gm.; damiana, 2.08 Gm., and nux vomica, 0.2 Gm., in a menstruum containing 20 per cent. of alcohol, with sugar and aromatics. Each dose of 2 fluidrams is said to contain: Hexamethylenetetramine, 7½ grains; saw palmetto, 5 grains; santal, 2½ grains; damiana, 2½ grains, and nux vomica, ¼ grain. U. S. trademark No. 37,924.

Leonard A. Seltzer, Detroit, Mich.

_Eusemine._*—A sterile solution, in hermetically sealed vials, of: Cocaine hydrochloride, 0.0075 Gm. (0.116 grains), and Adrenalin hydrochloride, 0.00005 Gm. (0.008 grains), dissolved in physiologic salt solution, 1 Cc.

Sharp & Dohme, Baltimore, Md.

Compressed Tablets Anesthesin, 2 1/2 grains.—Each tablet contains anesthesin, 0.162 Gm. (2½ grains).

Solution Atoxyl 10 per cent. (Sterilized).—Each 100 Cc. contain atoxyl, 10 Gm. (each fluidounce contains atoxyl, 48 grains), dissolved in distilled water.

Ampules Solution Atoxyl, 10 per cent. (Sterilized).—Each 100 Cc. contain atoxyl, 10 Gm. (each fluidounce contains 48 grains), dissolved in distilled water.

Ampules Solution Atoxyl, 10 per cent., with Novocaine, 1 per cent. (Sterilized).—Each 100 Cc. contain: Atoxyl, 10 Gm., and novocaine, 1 Gm. (each fluidounce contains: Atoxyl, 48 grains, and novocaine, 4 8/10 grains), dissolved in distilled water.

Compressed Tablets Atoxyl and Iron.—Each is said to contain: Atoxyl, 0.02 Gm. (⅓ grain), and ferrous lactate, 0.06 Gm. (1 grain).

Compressed Tablets Atoxyl and Quinine Comp.—Each tablet contains: Atoxyl, 0.01 Gm. (1/6 grain), quinine hydrochlor, 0.022 Gm. (⅓ grain), strych. nitrate, 0.0043 Gm. (1/150 grain), ferrous carbonate mass (Blaud), 0.162 Gm. (2½ grains).

Compressed Tablets Benzosol, 2 1/2 grains.—Each tablet contains benzosol 0.162 Gm. (2½ grains).

Compressed Tablets Benzosol and Codeine.—Each tablet contains: Codeine sulph., 0.0054 Gm. (1/12 grain), and benzosol, 0.162 Gm. (2½ grains).

Compressed Tablet Blaud with Atoxyl.—Each tablet contains Ferrous carb. mass (Blaud), 0.162 Gm. (2½ grains), and atoxyl 0.022 Gm. (⅓ grain).

Compressed Tablets Pyramidon, 1 1/2 grains.—Each tablet contains pyramidon, 0.097 Gm. (1½ grains).

Compressed Lozenges Orthoform, 1 grain.—Each lozenge contains orthoform, 0.065 Gm. (1 grain).

Compound Emulsion Petroleum, S. & D.—An emulsion containing: Refined petroleum, 28⅓ per cent.; petrolatum oil, 5 per cent., with calcium hypophosphite, 2.2 Gm., and sodium hypophosphite, 2.2 Gm. in each 100 Cc. Each dose of 4 fluidrams is said to contain: Calcium hypophosphite, 5 grains, and sodium hypophosphite, 5 grains.

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* For significance of star see foot-note under Tabloid Coffee Mint, p. 70.

Liquor Santaira.—Liquor Santali et Copaibae Compositus, S. & D.—Each 100 Cc. contains Santal oil 1 Cc. (5 minims in a fluidounce) and copaiba 2 Cc. (10 minims in a fluidounce) dissolved in 55 per cent. alcohol with addition of aromatic oils.

Solution Atoxyl, 10 per cent., with Novocaine, 1 per cent. (Sterilized).—Each 100 Cc. contain: Atoxyl, 10 Gm., and novocaine, 1 Gm. (each fluidounce contains atoxyl, 48 grains, and novocaine, 4 8/10 grains), dissolved in distilled water.

Soluble Hypodermic Tablets Atoxyl, 1/3 grain.—Each tablet contains atoxyl, 0.02 Gm. (⅓ grain).

Soluble Hypodermic Tablets Novocaine, 1/3 grain.—Each tablet contains novocaine, 0.02 Gm. (⅓ grain).

Soluble Tablets Novocaine, 1 1/7 grains.—Each tablet contains novocaine, 0.074 Gm. (1 1/7 grains).

*Tonic Hypophosphites.**—Each 100 Cc. is said to contain: Potassium hypophosphite, 0.33 Gm. (1½ grains in a fluidounce); iron hypophosphite, 0.33 Gm. 1½ grains in a fluidounce); manganese hypophosphite, 0.22 Gm. (1 grain in a fluidounce); calcium hypophosphite, 0.22 Gm. (1 grain in a fluidounce); quinine hypophosphite, 0.10 Gm. (½ grain in a fluidounce); strychnine hypophosphite, 0.013 Gm. (1/16 grain in a fluidounce.

F. H. Strong Co., New York.

*Chologestin.**—A liquid of which 100 Cc. is said to contain the amorphous sodium salt of glycoholic acid, 0.858 Gm.; true sodium salicylate from the natural oil of wintergreen, 1.07 Gm.; pancreatin, 2.15 Gm.; sodium bicarbonate, 2.15 Gm., in a menstruum containing 15 per cent. alcohol. Each half ounce is said to contain the amorphous sodium salt of glycoholic acid, 2 grains; true sodium salicylate from the natural oil of wintergreen, 2½ grains; pancreatin, 5 grains; sodium bicarbonate, 5 grains. U. S. trademark No. 61,767.

Veroform Hygienic Co., New York.

Veroform Germicide.—A practically neutral liquid containing 20 per cent. of formaldehyde gas dissolved in a solution of soap.

Veroform Antiseptic.—A practically neutral liquid containing 6 per cent. of formaldehyde gas dissolved in a solution of soap. U. S. patent No. 740,424 (Oct. 6, 1903; expires 1920). U. S. trademark "Veroform" No. 44,144.

H. K. Wampole Co., Philadelphia.

Bismuth Hydrate Comp.—A mixture containing in each 100 Cc.: Alcohol, 2 per cent.; chloroform, 0.4 Cc. (2 minims in a fluidounce); fluidextract of red gum (eucalypti gummi), 6.6 Cc. (32 minims in a fluidounce); phenyl salicylate, 0.20 Gm. (1 grain in a fluidounce); pepsin, 0.8 Gm. (4 grains in a fluidounce); bismuth hydroxycarbonate, an amount corresponding to 1.2 Gm. (6 grains in a fluidounce); antiseptic oils and aromatics, and glycerin, 20 per cent. No patents or trademarks.

Colchi-Methyl Capsules.—Each capsule contains: Colchicine, 0.00025 Gm. (1/250 grain); phenyl salicylate (salol), 0.13 Gm.

Glycerodine.—Glyceritum acidi hydriodici. It is said to contain in each 100 Cc. hydrogen iodide (absolute hydriodic acid), 1.54 Gm. (7 grains in a fluidounce).

GENERAL INDEX

PAGE
Acetone-Bromoform 13
Acetozone 5
Acetphenetidin 5
Acet-Phenetidin Compound Tablets..........72
Acet-Theocin Sodium 67
Acid, Acetylsalicylic 10
Acid, Agaric 5
Acid, Arsanilic, and Derivatives.......... 9
Acid, Diethyl-Barbituric, and Comp..........18
Acid, Filicic, and Related Substances..........29
Acid, Formic.......... 30
Acid, Methylene-Citrylsalicylic 43
Acid, Nucleic 44
Acid, Picric 50
Acid, Sulphanilic 64
Acne Vaccine 58
Adnephrin 23
Adrenalin 23
Adrenalin Ointments 71
Adrin 23
Agar-agar 5
Agurin 66
Airol 13
Akaralgia 71
Albargin 6
Albumin Tannate 65
Albuminum Betanaphthol 6
Alphozone 6
Alumnol 6
Alypin 6
Aminoform 33
Ammonium Hypophosphite 6
Ammonium, Gardner's Syrup of Hypophosphite of.......... 7
Amyl Valerate 7
Anesthesin, Compressed Tablets..........72
Anthrasol 7
Antiformin 7
Antigen Paper 61
Antipyrine Chloralhydrate 15
Antipyrine Ferric Chloride 8
Antipyrine Mandelate 8
Antipyrine Salicylate 7
Antiseptic-Credé 61
Antithermoline 71
Antithyroidin-Moebius 8
Antitoxin, Tetanus 57
Apinol 8
Apiol 9
Arbutin 9
Argentamin 9
Argenti Proteinas 43
Argonin 9
Argyrol 9
Argyrol Ointment 71
Aristochin 52
Aristol 68
Aromatic Cordial 72
Arsacetin 9
Arsenoferratin 10
Arsen-Triferrin 10
Aspirin 10
Atoxyl 10
Atoxyl, Solution 72

Bacillus bulgaricus 38
Bacillus Coli Vaccine 58
Bacillus Pyocyaneus Vaccine..........58
Barium Chloride 11
Benzosal 31
Benzosalin 11
Benzosol, Compressed Tablets 72
Benzoyl-Salicylate 11
Benzoyl-Salicylic-Acid-MethylesterMethyl .11
Berberine Hydrochloride 11

PAGE
Beta-Eucaine Hydrochloride 26
Beta-Eucaine Lactate 27
Betanaphthol Benzoate 11
Betol 12
Bile Salts 12
Bismal 13
Bismuth Beta-Naphtholate 47
Bismuth Bitannate 65
Bismuth Hydrate Comp..........73
Bismuth and Iron Citrate (Soluble)..........13
Bismuth and Lithium Citrate (Soluble).13
Bismuth Subcarbonate Preparations..........13
Bismuth Subgallate Preparations..........13
Bismuthal 72
Blandine Comp..........71
Blaud with Atoxyl, Compressed Tabs..........72
Bornyval 13
Brometone 13
Bromide and Acetanilide Comp., Granular Effervescent 71
Bromipin 14
Bromo-Mangan 14
Bromural 14
Brovalol 14
Buchu, Juniper and Acetate Potassium, Elixir of 72
Butyl-Chloral Hydrate 14

Caffeine and Potassium Bromide, Granular Effervescent 71
Caffeine and Sodium Bromide Compound, Granular Effervescent 71
Calcium, Dibromebehenate 54
Calcium Ichthyol 34
Calcium Lactate 15
Calcium, Monoidobehenate 54
Calomelol 15
Cannabis Compound, Syrup..........72
Carbosant 15
Carlsbad Salt (Artificial), Mulford, Granular Effervescent 71
Carlsbad Salt (Artificial) with Phenolphthalein Mulford, Granular Efferv..........72
Casca-Laxative 71
Caseinsilver 9
Celloidin 52
Cephaeline 15
Chinæ Nanning Extr..........72
Chinaphenin 53
Chinosol 15
Chloral Hydrate Preparations..........15, 16
Chloralamid 15
Chloralformamide 15
Chlorbutanol 16
Chloretone 16
Citarin 16
Coffee Mint, Tabloid 70
Colalin 12
Colalin Laxative 72
Colchi-Methyl Capsules 73
Coley's Toxins 61
Collargol 16
Colloidal Calomel 15
Colloidal Silver 16
Coniine Hydrobromide 16
Copper Citrate 17
Corpus Luteum 45
Coryfin 17
Cotarnine Hydrochloride 17
Cotarnine Phthalate 17
Cremo-Bismuth 13
Creosotal 18
Creosotal-Heyden 18
Creosote Carbonate 17, 18
Cupratum, Haemolum 33
Cupro-Hemol 33

PAGE
Dextrose 39
Diacetyl-Morphine 42
Diacetyl-Morphine Hydrochloride 42
Diaspirin 18
Diazyme Essence 19
Diazyme Glycerole 19
Digalen 20
Digipuratum 21
Digitalein Crude 21
Digitalin, French 21
Digitalin, German 22
Digitalin, True 21
Digitalis Preparations 20
Digitonin 22
Digitoxin 22
Dionin 43
Dionin Ointment 71
Dolomol 22
Duotal 31
Duotonol 72

Elix.-Buchu, Juniper, and Acetate Potas..72
Elixir Duozyma 71
Emetine Hydrochloride 22
Emulsion Cloftlin 71
Empyroform 22
Enule Soap Compound 70
Enzymes, Elixir of 20
Enzymol 20
Epicarin 23
Epinephrine 23
Epinephrine Preparations 23
Ergot, Extr. of, Purified..........24
Ergotinine Citrate 24
Ergotinine Citrate and Strychnine Sulphate, Tabloid 24
Erpiol 71
Erysipelas and Prodigiosus Toxins 61
Erythrol Tetranitrate 25
Ethyl Aminobenzoate 25
Ethyl Bromide 25
Ethyl Carbamate 25
Ethyl Chloride 26
Ethyl-Morphine Hydrochloride..........42, 43
Ethyl Salicylate 26
Ethylenediamine 26
Eucaine 26
Eucaloids 70
Eucalyptus gum 54
Euca-Mul 70
Eugallol 27
Eumydrin 27
Euphorin 27
Euphthalmin 27
Eupnein, Elixir of..........72
Eupyrine 27
Euquinine 53
Euresol 28
Europhen 28
Eusemine 72
Exodin 28

Ferments, Digestive 18
Ferments, Milk Curdling 20
Ferric Arsenite, Soluble..........28
Ferrichthyol 35
Ferripyrine 8
Ferro-Mangan Dieterich 28
Ferropyrine 8
Ferrous Lactate 28
Filmaron 29
Fluorescin 29
Foods, Medicinal 38
Formaldehyde, Solution 63

PAGE
Formalin 63
Formin 33
Fortoin 30

Gallogen 30
Gardner's Syrup, Hypophosphite of Ammonium 7
Gelsemine Hydrochloride.....30
Globulins, Antidiphtheric, and Serum Antidiphthericum 55
Glutol-Schleich 30
Glycerodine 73
Glycerole of Lecithin.....37
Glycerole Trypsin 19
Glycerophosphates 30
Glycerophosphates, Comp. Capsules of...71
Glyceryl guaiacolate 31
Gonococcus Vaccine 58
Guaiacodeine 31
Guaiacol Benzoate 31
Guaiacol Carbonate 31
Guaiacol Carbonate Comp.....72
Guaiacol Cinnamate 32
Guaiacol Compounds 31
Guaiacol methyl glycolate 32
Guaiacol-Salol 31
Guaiamar 31
Gujasanol 31

Hedonal 32
Helmitol 33
Hemaboloids 32
Hemogallol 33
Hemoglobin 33
Hemoglobin Derivatives 33
Hemol 33
Hemoquinine 72
Heroin 42
Heroin Hydrochloride 42
Heromal 72
Heroterpine 72
Hexamethylenamine 33
Holadin 19
Holocain and Adrenalin Ointment.....71
Holocaine Hydrochloride 34
Homatropine Hydrochloride 34
Hypophosphites, Tonic 73

Ichthalbin 34
Ichthargan 34
Ichthermol 35
Ichthoform 35
Ichthyol and Related Compounds....34, 35
Iodalbin 35
Iodipin 35
Iodoformogen 36
Iodo-Mangan 36
Iodone 36
Iodothyrine 68
Iothion 36
Iron Preparations, Organic.....44

Kefir Fungi 36
Kelene 26
Keratin 37
Kresamine 26

Lac Bismo 13
Lactophenin 37
Laminoids Ferruginous (nascent).....72
Lecibrin 37
Lecithin Preparations 37, 38
Lecithol 38
Lenigallol 38
Levulose 39
Liquor Argentamini 9
Liquor Digitoxini Solubilis 20
Liquor Ferro-Mangani 36
Liq. Ferro-Mangani Bromopeptonati Dieterich 14
Liquor Suprarenalis 24
Lithium Ichthyol 35
Lubraseptic 72
Lysidin 38

PAGE
Maltine 71
Maltzyme 71
Mammary Substance 45
Massolin 38
Medinal 18
Menthyl Ethylglycolate 17
Mercuran 71
Mercuric Benzoate 40
Mercuric Cyanide 40
Mercuric Oxycyanide 40
Mercuric Potassium Iodide, Soloid.....51
Mercuric Salicylate 40
Mercuric Succinimide 41
Mercuric Sulphate-Ethylenediamine 64
Mercurol 41
Mergal 41
Mesotan 41
Methaform 16
Methyl Chloride 42
Methyl-Santal 71
Methylatropinæ Nitras 27
Methylis 11
Micrococcus Neoformans Vaccine.....58
Monoglycol Salicylate 63
Monotal 32
Morphine Derivatives 42
Morphine Meconate 43

Naphtholis Salicylas 12
Neurocaine 43
Neuro-Lecithin 38
Neuronidia 72
Nioform 69
Nizin, Soloid 64
Noguchi Test for Syphilis.....61
Novargan 43
Novaspirin 43
Novocaine 43
Novocaine, Soluble Tablets.....73
Nucleates 44
Nuclein 44
Nutrose 39

Oil of Pine Needles.....44
Oil, Sesame, Brominized 14
Oil, Sesame, Iodized 35
Oleoresin of Parsley Seed.....44
Oleum Recini Dulce.....72
Orchic Substance 47
Organs of Animals.....45
Orphol 47
Orthoform, Compressed Lozenges.....72
Orthoform-New 47
Orthoform-New Hydrochloride 48
Osmium Tetroxide 48
Ovarian Substance 46
Ovoferrin 48
Oxaphor 48
Oxone 63
Oxychinolin Sulphate, Normal.....15
Oxygen Bath Salts.....63
Oxyntin 48

Panase 19
Pancreatic Preparations 19
Panopepton 39
Para Coto 48
Paracotoin 49
Paraformaldehyde 68
Parathyroid Gland, Desiccated.....46
Parotid Gland, Desiccated.....46
Parsley Camphor 9
Parsley Seed, Oleoresin of.....44
Pegnin 20
Pepsin, Essence of.....20
Pepsin Preparations 20
Peptone 39
Peptonoids 39
Perhydrol 49
Perogen Bath 63
Peroxide Zinc Soap.....70
Petroleum, Compound Emulsion.....72
Phenacetin 5
Phenocoll Hydrochloride 49
Phenocoll Salicylate 49

PAGE
Phenolphthalein 49
Phenyl Urethane 27
Phloridzin 49
Piperazine Compounds 50
Pituitary Substance, Desiccated.....46
Pneumococcus Vaccine 58
Pollantin 51
Potash, Sulphurated 64
Potassa Sulphurata 64
Potassium Guaiacol-Sulphonate 32
Potassium Mercuric-Iodide 51
Protan 51
Protein Silver Salt.....51
Protargol 51
Pyramidon 51, 52
Pyramidon, Compressed Tablets.....72
Pyramidon Salicylate 52
Pyroxylin 52

Quartonol 72
Quassin 52
Quinin Derivatives 52, 53, 54
Quinin and Urea Hydrochloride 53
Quinine Lygosinate 53

Red Bone Marrow, Extract of.....46
Red Gum 54
Regulin 72

Sabromin 54
Saccharum Amylaceum 39
Sajodin 54
Sal Ethyl 26
Saliformin 33
Salipyrin 8
Salophen 54
Saloquinine 54
Sanguinarine Nitrate 54
Santaiva, Liquor 73
Santali et Copaibæ Compositus, Liquor..73
Santalol 55
Santalyl-Carbonate 15
Santyl 55
Secacornin 55
Serum Antidiphthericum and Antidiphtheric Globulins 55
Serum, Antidysenteric, ...56
Serum, Antigonococcic 56
Serum, Antimeningococcus 56
Serum, Antipneumococcus 56
Serum, Antistaphylococcus 56
Serum, Antistreptococcus 56
Serum Antithyroideum, Merck 8
Serum, Antitubercle 57
Serum, Antityphoid 57
Serum, Horse, Normal 61
Serum Vaccine, Tuberculosis 59
Serums and Vaccines 55
Serums and Viruses 55
Sextonol 72
Sidonal 50
Silvercasein 9
Silver Citrate 61
Silver Lactate 61
Silver Proteinate 43
Silver Vitellin 9
Soamin 10
Soap Compound, Enule 70
Soap, Peroxide Zinc 70
Sodii Glyco-taurocholas bovis.....12
Sodium Anhydromethylene Citrate 16
Sodium Arsanilate 10
Sodium Arsenoferrialbuminate 10
Sodium Cacodylate 61
Sodium Caseinate 39
Sodium Cinnamate 62
Sodium Diethyl-Barbiturate 18
Sodium Ichthyol 35
Sodium Lygosinate 62
Sodium Nucleate 44
Sodium Oleate 62
Sodium Perborate 62
Sodium Peroxide 63
Sodium Sulphate, Granular Effervescent.71
Sophol 63

PAGE
Spirosal 63
Spleen, Desiccated 47
Staphylococcus Vaccines 58
Stovaine 63
Streptococcus Vaccine 59
Styracol 32
Sublamine 64
Succinic Dioxide 6
Sulphonal 64
Supracapsulin 24
Suprarenal Liquid 24
Suprarenalin 24
L-Suprarenin Synthetic 24
L-Suprarenin Synthetic Bitartrate 24
Syphilis, Noguchi Test for....61
Syrup Cannabis Compound....72

Tablets, Erythrol Tetranitrate....25
Tannalbin 65
Tannigen 65
Tannin Nucleo-Proteid 51
Tannismuth 65
Tannoform 65
Tannopin 65
Tannyl Acetate 65
Testicle 47
Tetanus Antitoxin 57
Theobromine and Theobromine Compounds 65, 66
Theocin 67
Theophyllin Sodio-Acetate 67
Theophylline and Theophylline Compounds 66, 67

PAGE
Thephorin 66
Thermodin 67
Thigenol 67
Thiocol 32
Thiol 67
Thiosinamine and Thiosinamine Compounds 67, 68
Thorium Nitrate 68
Thymol Iodide 68
Thymus, Desiccated 47
Thyreoidectin 8
Thyresol 68
Thyroid Preparations 68
Tonols 31, 72
Toxins, Prodigiosus and Erysipelas.... .61
Tribromphenol Bismuth 70
Triferrin 68
Trikresol 72
Trional 64
Trioxymethylene 68
Triphenin 69
Tropacocaine Hydrochloride 69
Trypsin 19
Tuberculin Preparations 59
Tuberculosis Serum Vaccine....59
Tumenol 35
Tumenol-Ammonium 35
Tussol 8
Typhoid Vaccine 59

Urea 69
Urethan-Hoechts 26
Urethane 26
Uriform 72

PAGE
Uropherin-B 66
Uropherin-S 66
Urotropine 33

Vaccine, Acne 58
Vaccine, Antirabic 60
Vaccine, Bacillus Coli 58
Vaccine, Bacillus Pyocyaneus 58
Vaccine, Friedlander 58
Vaccine, Gonococcus 58
Vaccine, Micrococcus Neoformans 58
Vaccine, Pneumococcus 58
Vaccine, Serum, Tuberculosis 59
Vaccine, Staphylococcus 58
Vaccine, Streptococcus 59
Vaccine, Typhoid 59
Vaccine Virus 57
Vaccines, Bacterial 58
Vaccines and Serums 55
Validol 69
Valyl 69
Veroform Antiseptic 73
Veroform Germicide 73
Veronal 18
Veronal-Sodium 18
Vioform 69
Viruses and Serums....55

Zeroform 70
Zinc Permanganate 70
Zinc Peroxide 70

INDEX TO MANUFACTURERS AND AGENTS

PAGE
- Abbott Alkaloidal Co.
  - Nuclein 44
  - Neuro-Lecithin 38
- Alexander, H. M. & Co.
  - Antirabic Vaccine 61
  - Diphtheria Antitoxin 55
  - Original Tuberculin 60
  - Vaccine Virus 57
- American Antiformin Co.
  - Antiformin 7
- Apinol Chemical Co.
  - Apinol 8
- Arlington Chemical Co.
  - Peptonoids 39
- Armour & Co.
  - Corpus Luteum 45
  - Desiccated Parathyroid Gland 46
  - Desiccated Parotid Gland 46
  - Desiccated Pituitary Substance 46
  - Desiccated Spleen 47
  - Desiccated Thymus 47
  - Elixir of Enzymes.... 20
  - Extract of Red Bone Marrow....46
  - Glycerole Trypsin 19
  - Lecithol 38
  - Mammary Substance 45
  - Orchic Substance 47
  - Ovarian Substance 46
  - Pituitary Body, Desiccated....46
  - Suprarenalin 24
  - Trypsin 19
- Bacterio-Therapeutic Laboratory
  - Tuberculin Preparations 60
- Barnes, A. C., Co.
  - Argyrol 9
  - Ovoferrin 48
- Binz, E. G., Co.
  - Eucaloids 70
  - Euca-Mul 70
- Bischoff, C., & Co.
  - Aminoform 33
  - Eupyrine 27

PAGE
- Bischoff, C., & Co.
  - Fortoin 30
  - Gallogen 30
  - Quinine Lygosinate 53
  - Sodium Lygosinate 62
  - Validol Preparations 69
  - Vioform 69
- Blair, Henry C., Co.
  - Iodone 36
- Burroughs, Wellcome & Co.
  - Antistaphylococcus Serum 56
  - Antistreptococcus Serum 56
  - Antityphoid Serum 57
  - Bismuth and Iron Citrate (Soluble).13
  - Bismuth and Lithium Citrate (Soluble) 13
  - Diphtheria Antitoxin Serum.... .55
  - Enule Soap Compound.... .70
  - Fluorescin 29
  - Morphine Meconate .... .43
  - Soamin 10
  - Soloid Mercuric Potassium Iodide...51
  - Soloid Nizin 64
  - Tabloid Coffee Mint 70
  - Tabloid Ergotinine Citrate and Strychnine Sulphate 24
  - Tabloid Mercury Succinimide 41
- Carnrick, G. W. Co.
  - Antithermoline 71
- Chinosol Co.
  - Chinosol .... .15
- Cloftlin Chemical Co.
  - Emulsion Cloftlin 71
- Crowell, Rufus & Co.
  - Colalin 12
- Cudahy Packing Co.
  - Supracapsulin 24
- Cutter Laboratory
  - Diphtheria Antitoxin 56
  - Gonococcus Vaccine 58
  - Polyvalent Streptococcic Serum....57

PAGE
- Cutter Laboratory.
  - Staphylococcus Vaccines 58
  - Tuberculin Preparations 60
  - Vaccine Virus 57
- Eusoma Pharmaceutical Co.
  - Mercuran 71
- Fairchild Bros. & Foster.
  - Bile Salts 12
  - Diazyme Preparations 19
  - Enzymol 20
  - Essence of Pepsin....20
  - Glycerole of Lecithin....37
  - Holadin 19
  - Lecibrin 37
  - Oxyntin 48
  - Panopepton 39
- Farbenfabriken of Elberfeld Co.
  - Acet-Theocin Sodium 67
  - Agurin 66
  - Aristochin 52
  - Aristol 68
  - Aspirin 10
  - Chinaphenin 53
  - Citarin 16
  - Coryfin 17
  - Creosotal 18
  - Diaspirin 18
  - Duotal 31
  - Epicarin 23
  - Eumydrin 27
  - Europhen 28
  - Hedonal 32
  - Helmitol 33
  - Heroin 42
  - Heroin Hydrochloride 42
  - Iodothyrine 68
  - Iothion 36
  - Mesotan 41
  - Monotal 32
  - Novaspirin 43
  - Phenacetin 5
  - Piperazine Compounds 50

PAGE
Farbenfabriken of Elberfeld Co.
Piperazine Tablets 50
Protargol 51
Sabromin 54
Sajodin 54
Salophen 54
Sophol 63
Spirosal 63
Sulphonal 64
Tannigen 65
Tannopin 65
Theocin 67
Thyresol 68
Trional 64
Veronal 18
Veronal-Sodium 18
Fries Bros.
Kelene 26
Fritzsche Bros.
Pollantin 51
Pollantin Powder, Fall 51
Gardner, R. W.
Syrup Hypophosphite of Ammonium 7

Hart, E. J., & Co.
Lac Bismo 13
Heyden Chemical Works
Betol 12
Calomelol 15
Carbosant 15
Novargan 43
Tannismuth 65
Xeroform 70
Heyden. Fabrik von.
Euphorin 27
Hoffmann-LaRoche Chemical Works
Airol 13
Benzosalin 11
Digalen 20
Secacornin 55
Thephorin 66
Thigenol 67
Thiocol 32
Hubbert, William R.
Diphtheric Antitoxin 56

Knoll & Co.
Anthrasol 7
Arsen-Triferrin 10
Cotarnine Phthalate 17
Digipuratum 21
Eugallol 27
Euresol 28
Ferropyrine 8
Ichthalbin 34
Iodoformogen 36
Lenigallol 38
Santyl 55
Styracol 32
Tannalbin 65
Triferrin 68
Koechl, Victor, & Co.
Albargin 6
Alumnol 6
Antimeningococcus Serum 56
Antipyrine Chloralhydrate 15
Antipyrine Salicylate 7
Antistreptococcic Serum 57
Argonin 9
Arsacetin 9
Atoxyl 10
Benzosol 31
Betanaphthol Benzoate 11
Diphtheria Antitoxin 56
Ethyl Aminobenzoate 25
Ferripyrine 8
Gujasanol 31
Holocaine Hydrochloride 34
Lysidin 38
Novocaine 43
Novocaine Preparations 43
Nutrose 39
Orthoform—New 47
Orthoform—New Hydrochloride 48
Oxaphor 48

PAGE
Koechl, Victor & Co.
Pegnin 20
Pyramidon 51
Pyramidon Salicylate 52
Sidonal 50
L-Suprarenin Synthetic 24
L-Suprarenin Synthetic Bitartrate 24
Tumenol 35
Tussol 8
Urethan-Hoechst 26
Valyl 69
Louisville Pharmacal Works.
Elixir Duozyma 71

Mallinckrodt Chemical Works.
Guaiamar 31
Malt-Diastase Co.
Maltzyme Preparations 71
Maltine Co.
Maltine Preparations 71
Manhattan Eye Salve Co.
Adrenal Ointments 71
Adrenalin Ointments 71
Argyrol Ointment 71
Dionin Ointment 71
Holocain and Adrenalin Ointment 71
Memorial Institute for Infectious Diseases.
Antidiphtheritic Serum 56
Merck & Co
Acet Theocin Sodium 67
Antithyroidin—Moebius 8
Bismal 13
Bromipin 14
Bromural 14
Calcium Ichthyol 34
Cotarnine Hydrochloride 17
Cupro-Hemol 33
Dionin 43
Erythrol Tetranitrate Tablets 25
Euquinine 53
Filmaron 29
Ferrichthyol 35
Formin 33
Guaiacol-Salol 31
Hemogallol 33
Hemol 33
Ichthargan 34
Ichthermol 35
Ichthoform 35
Ichthyol 34
Iodipin 35
Iodothyrine 68
Lactophenin 37
Lithium Ichthyol 35
Nucleic Acid 44
Perhydrol 49
Saliformin 33
Saloquinine 54
Saloquinine Salicylate 54
Sodium Ichthyol 35
Sodium Perborate 62
Solution Thiosinamine Sodium Salicylate 68
Tannoform 65
Thermodin 67
Trioxymethylene 68
Triphenin 69
Tropacocaine Hydrochloride 69
Urethane 26
Uropherin-B. 66
Uropherin-S. 66
Veronal 18
Merrell, Wm. S., Chemical Co.
Akaralgia 71
Erpiol 71
Morgenstern & Co.
Endotin 60
Perogen Bath 63
Mulford, H. K., Co.
Acne Vaccine 58
Adrin 23
Antidysenteric Serum 56
Antigen Paper 61
Antimeningitis Serum 56
Antipneumococcus Serum 56

PAGE
Mulford, H. K., Co.
Antistreptococcic Serum 57
Bacillus Coli Vaccine 58
Bacillus Pyocyaneus Vaccine 58
Blandine Comp. 71
Casca-Laxative 71
Comp. Capsules of Glycerophosphates 71
Cremo-Bismuth 13
Diphtheria Antitoxin, Concentrated 56
Friedlander Vaccine 58
Glycerinated Vaccine Lymph 58
Granular Efferv. Bromide and Acetanilide Compound 71
Granular Efferv. Caffeine and Potassium Bromide 71
Granular Efferv. Caffeine and Sodium Bromide Compound 71
Granular Efferv. Carlsbad Salt (Artificial) 71
Granular Efferv. Carlsbad Salt (Artificial) with Phenolphthalein, Mulford 72
Granular Efferv. Sodium Sulphate 71
Guaiacol Carbonate Comp. 72
Methyl-Santal 71
Micrococcus Neoformans Vaccine 58
Neisser Bacterin 58
Normal Horse Serum 61
Pneumococcus Vaccine 58
Staphylococcus Vaccines 58
Streptococcus Vaccine 59
Tetanus Antitoxin 57
Tuberculin Preparations 60
Typhoid Vaccine 59

National Pharmacy Co.
Bismuthal 72
National Vaccine and Antitoxin Institute.
Diphtheria Antitoxin, Concentrated 56
Glycerinated Vaccine Virus 58
Gonococcic Vaccine 58
New York Department of Health.
Antitetanic Globulin 57
Diphtheria Antitoxin, Refined and Concentrated 56
New York Quinin and Chemical Works.
Guaiacodeine 31

Palisade Manufacturing Co., Yonkers.
Hemaboloids 32
Parmele Pharmacal Co.
Chinosol 15
Stovaine 63
Parke, Davis & Co.
Acetozone 5
Adrenalin 23
Antidiphtheric Serum 56
Antigonococcic Serum 56
Antistreptococcic Serum 57
Antitetanic Serum 57
Antitubercle Serum 57
Brometone 13
Chloretone 16
Erysipelas and Prodigiosus Toxins 61
Glycerinated Vaccine 58
Gonococcus Vaccine 58
Iodalbin 35
Mercurol 41
Staphylococcus Vaccines 58
Streptococcus Vaccine 59
Suprarenal Liquid 24
Thyreoidectin 8
Tuberculin Preparations 60
Pitman Myers Co.
Aromatic Cordial 72
Elixir Buchu, Juniper and Acetate Potassium 72
Oleum Ricini Dulce 72
Syrup Cannabis Compound 72
Tablets Acet—Phenetidin Comp. 72
Pulvola Chemical Co.
Dolomol 22
Reinschild Chemical Co.
Bromo-Mangan 14
Extractum Chinae Nanning 72

PAGE

- Reinschild Chemical Co.
  - Ferro-Mangan Dieterich 28
  - Iodo-Mangan 36
  - Regulin 72
- Riedel & Co.
  - Bornyval 13
  - Mergal 41
  - Salipyrin 8
  - Thiol 67
- Roessler & Hasslacher Chemical Co.
  - Oxone 63
  - Peroxide Zinc Soap................70
- Russel & Lawrie.
  - Lubraseptic 72
- Schering & Glatz.
  - Antiseptic—Credé 61
  - Aronson's Antistreptococcus Serum..57
  - Argentamin 9
  - Beta-Eucaine Hydrochloride 26
  - Beta-Eucaine Lactate 27
  - Brovalol 14
  - Celloidin 52
  - Chloralamid 15
  - Collargol 16
  - Creosotal-Heyden 18
  - Duotal 31
  - Ductonol 72
  - Empyroform 22
  - Ethylenediamine Solution 26
  - Eucaine 26
  - Euphthalmin 27

PAGE

- Schering & Glatz.
  - Exodin 28
  - Formalin 63
  - Glutol-Schleich 30
  - Kresamine 26
  - Levulose 39
  - Orphol 47
  - Phenocoll Hydrochloride 49
  - Sublamine 64
  - Tonols 72
  - Trikresol 72
  - Urotropine 33
- Schieffelin & Co.
  - Antistreptococcic Serum 57
- Colalin Laxative......................72
  - Concentrated Antitoxin 57
  - Elixir Eupnein 72
  - Glycerinated Vaccine Virus.........57
  - Hemoquinine 72
  - Heromal 72
  - Heroterpine 72
  - Laminoids Ferruginous (Nascent)...72
  - Massolin 38
  - Neurocaine 43
  - Neuronidia 72
  - Uriform 72
- Seltzer, Leonard A.
  - Eusemine 72
- Sharp & Dohme.
  - Compound Emulsion Petroleum......72
  - Compressed Lozenges Orthoform.....72

PAGE

- Sharp & Dohme.
  - Compressed Tablets Anesthesin 72
  - Compressed Tablets Benzosol........72
  - Compressed Tablets Blaud with Atoxyl 72
  - Compressed Tablets Pyramidon.....72
  - Ferric Arsenite, Soluble...........28
  - Hypodermic Tablets Mercuric Succinimide 41
  - Liquor Santaiva 73
  - Solution Atoxyl 72
  - Solution Atoxyl with Novocaine.....73
  - Soluble Tablets Novocaine..........73
  - Tonic Hypophosphites 73
- Stearns, F. & Co.
  - Adnephrin 23
  - Alphozone 6
  - Diphtheric Antitoxin 56
  - Methaform 16
  - Panase 19
  - Pneumolytic Serum 56
  - Streptolytic Serum 57
- Veroform Hygienic Co.
  - Veroform Antiseptic 73
  - Veroform Germicide 73
- Wampole, H. K., Co.
  - Bismuth Hydrate Comp............73
  - Colchi-Methyl Capsules 73
  - Glycerodine 73

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OBSTETRICS AND ANIMAL EXPERIMENTATION [*]

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Unfortunately, the relation between animal experimentation and obstetrics appears at first sight to be less direct and striking than in many other branches of medicine. Nevertheless, I consider that it can be demonstrated beyond peradventure that the greater part of the advances made during the past thirty-five years have resulted either directly or indirectly from research of this character.

The chief advances in obstetrics, in which animal experimentation has played a part, may be summarized as follows:

1. The recognition of the bacterial origin of puerperal infection, which has enabled us to prevent and overcome its former terrible mortality.
2. The application of aseptic technic to various obstetrical operations, thereby rendering comparatively harmless many procedures which were formerly murderous.
3. The recognition of the bacterial nature of certain infectious diseases of the newly born child, such as lockjaw and umbilical infections, which enables us to save each year the lives of thousands of infants, which under former conditions would have been lost.
4. The biologic study and standardization of certain drugs, such as ergot, whereby efficient preparations are available for the prevention and control of hemorrhage.
5. The demonstration of the internal secretion of the ovary, which has led to the therapeutic employment of ovarian tissue extracts, and to greatly increased conservatism in operations on the ovaries.
6. Experimental studies concerning the nature of the toxemias of pregnancy.
7. The experimental production of fetal deformities, which has led to a clearer conception of teratology, and the abandonment of the superstitious belief in maternal impressions.

1. *THE RECOGNITION OF THE BACTERIAL ORIGIN OF PUERPERAL FEVER*

Those not familiar with the older obstetrical literature scarcely realize the extent of the ravages of puerperal infection before the introduction of rigid antiseptic precautions in the conduct of labor, as well as the almost miraculous revolution which has followed their employment.

In this connection, I shall attempt to give some idea of the mortality attending puerperal infection in the past, and of the confusion regarding its nature. Then I shall refer to the part played by animal experimentation in the development of the bacteriology of wound infection and the establishment of aseptic technic, as well as the demonstration of the bacterial nature of puerperal infection, and finally I shall refer briefly to the revolutionary results which have followed the practical application of these principles.

In preantiseptic times puerperal fever ravaged the lying-in hospitals throughout the world, and each year caused the unnecessary death of thousands of women in the best years of life. How great the mortality was can best be appreciated by referring to the results obtained in the various civilized countries of the world, prior to the recognition of the etiologic rôle of the streptococcus.

PUERPERAL FEVER IN FRANCE

LeFort, in his railing accusation against the lying-in hospitals of France, which appeared in 1866, calculated that 30,394 deaths from puerperal fever had occurred in the 888,312 women delivered in the hospitals of Paris up to the year 1864—an incidence of 3.5 per cent., or one death to every 27.2 labors. Moreover, he stated that from 1860 to 1864, inclusive, the mortality in the Maternité of Paris was 12.4 per cent., which in December, 1864, rose to the colossal height of 57 per cent.; while in the Clinique it averaged 14.7 per cent. between the years 1833 and 1864, and on several occasions rose above 20 per cent. On the other hand, the mortality outside of the hospitals was much less, as only one woman perished out of every 212, which indicated that seven-eighths of the hospital deaths were due to conditions prevailing in them.

Such results were not limited to the past century, as Tenon in 1788 reported that the mortality at the Hôtel-Dieu for the fifteen years prior to 1786 was 6.4 per cent., and described almost inconceivable conditions of overcrowding and filth. Other observers described similar conditions. Thus, Charrier recorded a mortality of 7.5 per cent. at the Maternité in 1854, and Depaul one of 5.3 per cent. at the Clinique in 1856. Tarnier in his graduation thesis pointed out that 114 deaths from puerperal fever had occurred at the Maternité during the year 1856, an incidence of 5.1 per cent., as compared with 0.31 per cent. in the portion of the city immediately adjoining it.

Malgaine likewise studied the results in 14,197 and 99,911 women delivered respectively, in the hospitals and in the city of Paris during the years 1861 and 1862, and found a mortality of 8.2 and 0.56 per cent.; while

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[*] This paper is one of the series prepared for and reprinted by the Bureau on Defense of Medical Research of the Council on Health and Public Instruction of the American Medical Association for circulation among the public. Twenty of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, circulation of the blood, tropical diseases, syphilis, obstetrics, etc. A price-list will be sent on application. This article is abbreviated in THE JOURNAL. The pamphlet contains the complete article, including a long bibliography.

Quinquaud stated that 65 per cent. of all women delivered in the St. Antoine Hospital during the year 1869 were infected. Moreover, Delaunay in his recent history of the Maternité de Paris reports that the average mortality for the ten years ending with 1869 was 10.12 per cent., which rose as high as 18.43 per cent. in 1864.

Naturally, such results could not pass unnoticed, and the subject was frequently brought up for discussion. Thus, following a paper on puerperal fever by Guérard before the Académie de Médecine in 1858, a discussion arose which lasted for five months, which led to no definite conclusions, although participated in by the leading authorities in France. Similar discussions also occurred before the Académie in 1861 and 1862, the Société de Chirurgie in 1866, and the Société médicale des hôpitaux in 1869 and 1870. In all of them the most divergent views were expressed, some speakers holding that puerperal fever was contagious, and others that it was an unavoidable visitation of Providence. All sorts of theories were advanced in explanation of its origin, and it was attributed in turn to the peculiar characteristics of the parturient and puerperal woman, to hospital miasms and to the filthiness, faulty construction and ventilation of the hospitals; but not a word was said concerning the dirty hands of the obstetrician. Every suggestion was tested as soon as made, but still the mortality continued unchecked. Finally, in desperation it was suggested that the old lying-in hospitals be abandoned and be replaced by smaller ones, accommodating only a limited number of women, and that most women be cared for in their own homes or in small institutions conducted by specially appointed midwives. At the end of this period, the results had become so intolerable that it became the prevailing opinion that epidemics could be combated only by closing the lying-in hospitals, and such a drastic remedy was forcefully recommended at the International Congress held at Brussels in 1875.

The prevalence of puerperal fever had become a scandal, and, passing beyond purely medical circles, engaged the earnest attention of the Bureau of Public Assistance, whose able director, Husson, after thoroughly investigating the subject, was forced to admit that he saw no way of coping with it, and said:

> For the past sixty years the combined efforts of the administration and of the chiefs of service of health, have not been able to control the curse of puerperal fever, and up to this time the only palliative means of any effect in opposing the evil has been the momentary evacuation of the infected wards. The figures received from the various services of obstetrics still show a mortality high enough to call forth investigation, and to engage the friends of science and humanity to search in every possible way by what means it may be possible to arrest the progress of so terrible a malady, which up to the present time has disappointed all calculations.

It is interesting to note that the monumental work of LeFort, whose statistics are quoted above, was undertaken at the instigation of Husson; but, when the report was ready and showed so clearly the glaring conditions in France, the Bureau of Public Assistance would not allow it to be published under its auspices. The following quotation from Hervieux's immense work on puerperal infection, which appeared in 1870, will also serve to indicate the gravity of the situation:

> The puerperal epidemics are to woman what war is to man. Like war they destroy the most healthy, the bravest and the most useful portion of the population; like war they take subjects in the flower of their age and spread terror and desolation throughout the territory which they devastate. It belongs to politics to preserve us from the calamities of war, but to medicine is reserved the task of preventing and doing away with such epidemics.

PUERPERAL FEVER IN GERMANY

Conditions similar to those in France likewise obtained in Germany, but owing to the smaller size of its lying-in hospitals, the epidemics were usually not so extensive.

On behalf of the Berlin Obstetrical Society, Boehr in 1877 undertook to study the mortality from puerperal fever in Prussia, and found that in the sixty years ending with 1875 the appalling number of 363,624 women had died from it in that state alone. Moreover, he calculated that the disease was the cause of 12 per cent. of the total number of deaths occurring in both sexes between the ages 15 and 50 years which increased to 18.58 per cent. between the ages 25 and 30 years. Furthermore, assuming that each marriage would result in 4.2 children, he estimated that every thirtieth married woman in Prussia would eventually fall a victim to it.

Based on Boehr's work, and its own investigations, a committee of the society presented a *Denkschrift* to the minister of education, in which it was stated that many more persons died from puerperal fever than from cholera and small-pox combined, although sixteen epidemics of the former disease had occurred during the period covered by the statistics. For the protection of the public health, it was urged that the disease be made a "notifiable" one, so that steps could be taken to regulate the practice of midwives. Hegar made a similar study of the conditions in Baden and found that 0.732 per cent. of all labors ended fatally, one-half of the total number of deaths being due to puerperal fever.

The work of Boehr was continued by Ehlers in 1900, who found as the result of aseptic precautions that the mortality in the large cities had been reduced by one-half, but had remained practically unchanged in the country districts.

PUERPERAL FEVER IN GREAT BRITAIN

Epidemics of puerperal fever were reported in the eighteenth century by Hunter, Denman, Hulme, Leake, Kirkland, Clarke, White, Gordon and others, the most extensive being that recorded by White in the Lying-In Hospital of Manchester, where the mortality was 4.1 per cent. between the years 1755 and 1771. Owing to the comparatively small size of the lying-in hospitals of Great Britain, and particularly to the early recognition by English physicians of the contagious nature of puerperal fever and its relation to erysipelas, the epidemics were not so extensive and were less fatal than those on the continent; nevertheless, prior to the antiseptic period the results obtained were very discouraging. Until recently, the Rotunda Hospital in Dublin was the only large lying-in institution in the British Empire, and its results have been recorded by Churchill, Kennedy and Steele. The latter stated that in 198,481 labors, occurring up to the year 1870 the average mortality was 1.32 per cent., which rose to 3.27 per cent. between 1861 and 1870. He also reported that for the twenty-two years preceding and including 1876, the several London lying-in hospitals presented the following mortalities:

	Per cent.
Queen Charlotte Hospital	2.82
British Lying-In Hospital	1.57
General Lying-In Hospital	1.41
City of London Lying-In Hospital	1.35

Some idea of the seriousness with which the condition was regarded was shown by the appearance of an editorial in the *Lancet*, only a few weeks after the appearance of Lister's first article on antiseptic surgery, recommending the closing of all lying-in hospitals. Moreover, Kennedy in 1869 advocated evacuating the Rotunda Hospital in Dublin and delivering the women in tents or shacks scattered throughout its grounds; while Florence Nightingale considered that large lying-in hospitals could never be conducted safely and that their employment for the training of students was incompatible with a low death-rate.

Following a paper by Spencer Wells, the entire question of puerperal infection was thoroughly discussed before the London Obstetrical Society in 1875. All of the prominent obstetricians of the time took part in the discussion, and, while the most divergent views were expressed concerning its nature, the general consensus of opinion, well illustrated by the following quotation, was that lying-in hospitals had an inherent mortality which could probably never be overcome:

> There is only one secret of safety, and that is to have the woman confined at her own house where she can have her own nurse, who has not been anywhere in the way of infection, and her own medical man who is free from infection. Then the chances are that she will come on favorably and happy. Without that there is no security. The lying-in hospital is not now by any means so serious a matter as it used to be: still it is always like sitting on a volcano; it may explode at any moment (Barnes).

Furthermore, the general feeling of hoplessness was well expressed by Duncan, in his monograph on "The Mortality of Childbed," when he said:

> The disease may have its ravages restricted, but it is yet to be shown that it can be altogether prevented. It is in truth as little preventable as any disease in the nosology, or any crime in the statute-book. It is possibly preventable, but it has certainly never been prevented.

Even after the introduction of antiseptic methods, the views as to the undesirability of lying-in hospitals continued to persist in England; and as late as 1885 one of the sections in Playfair's text-book on midwifery was entitled "Should Lying-In Hospitals Be Abolished?" Indeed, the improvement in that country has been less marked than elsewhere: Cullingworth, after studying the statistics of the Registrar General's office for 1897, stated that the general mortality had shown no decrease, except as compared with the year 1843; Boxall reported a similar condition of affairs as late as 1905.

PUERPERAL FEVER IN THE UNITED STATES

That the United States was not spared in this regard is shown by the fact that Hodge reported a mortality of 5.6 per cent. in the Pennsylvania Hospital for the thirty years preceeding 1833. Lusk observed an epidemic in the Bellevue Hospital in 1872 with a mortality of 18 per cent., which led to the removal of the department to Blackwell's Island. But even there the infection continued until after the introduction of antiseptic methods. Similar results were observed in the New York Maternity Hospital, where Garrigues noted a mortality of 4.17 per cent. for the years 1875–1883, which in the latter year, just prior to the introduction of antiseptic methods, rose to 7.17 per cent.

VIEWS CONCERNING THE NATURE OF PUERPERAL FEVER

Sedillot stated in 1817 that puerperal fever was not a distinct disease, but rather an ordinary infection, which was modified by the puerperal state. It required, however, nearly seventy years before this doctrine became generally accepted.

The infectious nature of puerperal fever was first clearly emphasized by Gordon of Aberdeen, who based his conviction on seventy-seven cases observed during an epidemic in Aberdeen between the years 1789 and 1792. Among other things, in his forceful monograph, he wrote:

"It is a disagreeable declaration for me to mention that I myself was the means of carrying the infection to a great number of women"; and, in another place, "Fresh air and cleanliness are not sufficient for the destruction of the contagion, which can only be effected by fire and smoke."

Notwithstanding these clear-cut teachings, and the conclusive evidence which Gordon adduced in their support, the medical world was but little affected, and it was not until after the introduction of Listerian methods that such ideas became generally accepted. Similar views were forcibly and eloquently expressed in 1843 by Oliver Wendell Holmes in his monograph on "The Contagiousness of Puerperal Fever," which was reprinted with additions in 1855 under the title "Puerperal Fever as a Private Pestilence." His teachings, however, were opposed by Hodge and Meigs, the leading obstetricians of the day, and, while impressing many practitioners with the necessity of temporarily abstaining from obstetric work when several fever cases had occurred in their practice, they had no effect on the results obtained in lying-in hospitals. Kneeland expressed similar views in 1847, which met with the same fate.

The most important contribution to this aspect of the subject was made by Semmelweis in 1847, who, after carefully studying the causes underlying the horrible mortality in the lying-in hospital of Vienna, came to the conclusion that the disease was identical with wound infection, and was due to the contamination of patients by hands soiled by contact with autopsy material or wound secretions. Furthermore, he thought that its propagation could be checked by washing the hands in a solution of chlorinated lime, by which means he was able to reduce the mortality from 11.4 to 1.27 per cent.

Semmelweis' views concerning the nature and causation of puerperal fever were perfectly clear; and if, in the following quotation, one substitutes the words "pyogenic bacteria" for "decomposed animal organic material" his conception holds perfectly good at the present time. After stating that he regarded child-bed fever as a resorption fever, he continued:

> The decomposed animal organic material, which when absorbed causes child-bed fever, is in the vast majority of cases brought to the individual from without. These are the cases which represent child-bed fever epidemics, and these are the cases which can be prevented. The carrier of the decomposed animal organic material is the examining finger, the operating hand, bed-clothes, the atmospheric air, sponges, the hands of midwives and nurses which have been in contact with the excreta of seriously sick puerperal women or other ill persons and then handle parturient or recently delivered women. In a word, the carrier of the decomposed animal organic material is anything which has been contaminated by decomposed animal organic material and then comes in contact with the genitals of the individual. The area from which the decomposed animal organic material is absorbed is the internal surface of the uterus, extending upward from the internal os. As the result of pregnancy this has been robbed of its mucous membrane, and accordingly presents a surface which is unusually adapted for absorption.

In spite of these clear-cut views, his teachings were opposed by the leading authorities of Germany and France, and he died a disappointed man. He nevertheless prophesied that his views would eventually be universally accepted, and, in a postscript to his great work, wrote:

> But should it not be vouchsafed me, which I hope God may prevent, to see this happy time with my own eyes, nevertheless the conviction that such a time must inevitably come sooner or later will cheer me in my dying hour.

Almost simultaneously with Semmelweis, Simpson insisted on the contagious nature of the disease and its identity with ordinary wound infection. More or less similar views were also expressed by Tarnier in 1856 and by Trousseau in 1858; but it was necessary for many years to elapse before they were accepted by the general mass of the profession.

A similar divergence of opinion continued until after 1875, when the discoveries of Lister and the bacterial origin of puerperal fever first began to be accepted. Prior to that time, the condition was generally considered as unavoidable, and was attributed to cosmic, atmospheric or telluric influences, to the genius epidemicus, imperfect ventilation and all sorts of other conditions; but, with the exception of a few far-seeing men, no one believed that it could be communicated from one patient to another by means of a dirty finger.

The teachings of Lister were introduced into France in 1875 by Championnière and Budin, and were popularized in Germany by a personal tour. Ahlfeld has given an interesting reminiscence of Lister's visit to Leipsic at that time, and has preserved a verse sung in his honor.

Just sind es jetzt fünf Jahre her,
Da drang die Kunde übers Meer;
Es lebt ein Mann in Edinburg,
Das sei ein eigener Chirurg,
In Karbolnebel eingehüllt,
Der rings die Luft mit Dünsten füllt,
Betriebe er mit aller Macht,
Die niedere Bakterienjagd . . .

Prior to that time only a few voices were raised in support of the bacterial nature of puerperal fever, and Lee and Sir Spencer Wells were practically alone in England in advocating it. Indeed, such views did not begin to receive general acceptance until after Pasteur had cultivated the streptococcus and demonstrated it before the Académie de Médecine de Paris, in March, 1879.

It is interesting to recall the fact that this demonstration was preceded by a paper by Hervieux, in which he said:

> "I lay down the principle that the inferior organisms as yet known, vibrions, bacteria, batonnets and moving bodies, cannot possibly explain the production of puerperal septicemia," and concluded, "but I must confess that I have a terrible fear, a fear from which I am not able to rid myself, and which the academy will understand; and that is that I shall die before any one will have discovered that vibrion."

Immediately afterwards Pasteur arose and drew on the blackboard several chains of little dots, which he stated he had every reason to believe were its actual cause. This was the beginning, but many years of persistent investigation were required before the bacterial nature of puerperal infection was universally recognized.

THE DEVELOPMENT OF BACTERIOLOGY; AND RECOGNITION OF BACTERIAL ORIGIN OF PUERPERAL INFECTION

This is not the place to trace the history of the development of bacteriology in general, or even its application to wound infection. As far as I can learn, the relation of bacteria to infectious diseases, and the necessity of recourse to animal experimentation for its demonstration, was first clearly expressed by Henle in 1840. He prophesied that the "contagium" in infectious diseases must be a living organism, and laid down the following criteria, which must be fulfilled in order to prove such a relationship:

1. The constant presence of one and the same microorganism.
2. Its isolation.
3. The experimental study of the same by animal experimentation.

Following this, the development of bacteriology as applied to medicine was comparatively slow, and it was not until after the work of Pasteur on putrefaction, and the application of his ideas to surgery by Lister, that very considerable advances were made. Indeed, it may be said that extensive development along these lines was not possible until after Koch, by the discovery of solid culture media, had put into our hands a convenient method of isolating and cultivating bacteria. Almost immediately following this invention, the various bacteria concerned in ordinary wound infection were isolated and their pathogenic action demonstrated experimentally on animals. Aside from Pasteur and Koch, the greater part of this work was done by Ogston, Rosenbach, Passet, Garre and Fehleisen, and so convincing was their demonstration, that the information concerning the pyogenic cocci given in Baumgarten's "Handbuch der pathologischen Mycologie" in 1887 is almost as satisfactory as that available at the present time. Moreover, between the years 1884 and 1889, the work of Carle and Rattone, Nicolaier and Kitasato resulted in the isolation of the tetanus bacillus, and the conclusive experimental demonstration of its pathogenic action.

All of these discoveries were based on animal experimentation, and indeed it may be said that none of the important advances in bacteriology would have been possible without its aid. Occasionally, enthusiastic investigators, such as Bumm, Garre, Bockhart and Fehleisen, made experiments on their own persons, and thereby still further convinced themselves of the pathogenic properties of certain pyogenic bacteria.

Following the recognition of the bacteria concerned in the production of wound infection, it became possible to test the efficiency of the various antiseptics recommended for their destruction. It is particularly to Koch that we are indebted for the fundamental contribution to the doctrine of disinfection, and for the demonstration of the great value of bichlorid of mercury. Further investigation, however, gradually materially impaired our faith in the efficacy of antiseptics, and led to the development of aseptic surgery.

As far as I have been able to learn, Semmelweis in 1846 was the first to resort to animal experimentation in the hope of solving the problem of puerperal infection. He introduced into the freshly delivered uterus of animals, uterine discharges and peritoneal exudate from infected women, and in the majority of instances was able to produce a fatal infection. Animal experiments were also made by Tarnier, Mayrhofer, Coze and Feltz, Quinquad, Orth, Heiberg, Eberth, D'Espine, Kehrer, Karewsky, Miller, Pasteur and Doléris and many other later investigators.

Of these Mayrhofer, Coze and Feltz, Pasteur and Doléris deserve especial mention. The former in 1864 observed in the interior of the infected uterus, bacteria, which he described as vibrions, and by the injection into animals of lochia containing them was able to reproduce the disease. Coze and Feltz in 1869 apparently demonstrated the presence of streptococci in the blood of women dying from puerperal fever, and cultivated them in rudimentary fluid culture media. They also produced death in animals by their innoculation. As has already been mentioned, Pasteur was the first to describe clearly, and to cultivate the streptococcus from cases of puerperal infection, and together with his collaborator Doléris effectively demonstrated its etiologic significance.

Following Pasteur, it has gradually been demonstrated that, while the streptococcus is the organism most usually concerned in the production of fatal puerperal infections, all of the pyogenic bacteria, which play a part in ordinary wound infection, may likewise give rise to them. Scarcely any one who has busied himself with their study has failed to resort to animal experimentation, and none of the recent advances along this line would have been possible without its aid.

Listerian methods were not adopted in gynecology and obstetrics until after 1875, and for the succeeding few years the chief reliance was placed on the free use of phenol for disinfecting the hands and dressings and for use as a spray. Such precautions were soon carried to ridiculous extremes, and at the acme of the antiseptic period it was thought necessary to remove all furniture from the room in which a woman was to be confined, to scrub the walls and floors with a phenol solution and to have a nebulizer spray it on the external genitalia during the second stage of labor. At the same time, disinfection of the hands was slighted, as it was believed that their immersion in a phenol solution for a few moments was sufficient to render them absolutely sterile. As these precautions did not lead to the complete disappearance of puerperal infection, the attempt was made to destroy all bacteria in the birth canal by means of vaginal and intra-uterine douches of phenol solution, or of bichlorid of mercury, after its introduction in 1881.

With the gradual development of clearer ideas concerning the process of infection and the limitations of disinfection in general, the employment of antiseptic methods was gradually abandoned and its place taken by the aseptic technic which we now employ, in which less and less importance is attached to chemical disinfection and increasingly more weight laid on absolute subjective and objective cleanliness.

RESULTS FOLLOWING THE EMPLOYMENT OF ANTISEPTIC AND ASEPTIC TECHNIC

Following the introduction of antiseptic methods into obstetrics, there occurred a marked diminution in the death-rate from puerperal infection, which however, was nothing like so great as in the later or aseptic period. Thus, Dohrn analyzed the results obtained in 104,278 women delivered in forty-seven German lying-in institutions between the years 1874 and 1883 inclusive, and found an average mortality of 1.37 per cent. At the beginning of the period it was 1.73 per cent., and became reduced to 0.96 per cent. at its end. Moreover, it is interesting to note that the worst results were obtained in the institutions used for the instruction of students, while the best were in those not employed for teaching purposes, the mortality averaging 1.9 and 0.56 per cent., respectively.

When compared with the mortality of 3 or 4 per cent., which characterized the previous decade, the results were most encouraging; and Dohrn felt that they probably could not be improved on, as he stated that "the mortality in lying-in hospitals will never be lowered for any great length of time to the percentage prevailing in private practice; and, if we estimate the latter at 0.6 to 0.7 per cent., the institutional mortality would still be nearly double as high. The lying-in institutions have to contend with such unfavorable conditions that such results as in private practice would never be permanently possible."

Bar stated that, following the introduction of antiseptic methods in the Maternité of Paris, the mortality fell to 1 per cent. in 1873 and to 0.8 per cent. in 1882; while Tarnier has given a very graphic picture of the conditions in the same hospital. For this purpose he distinguished three periods; namely, from 1858 to 1869, from 1870 to 1880, and from 1881 to 1889, and designating the first as the period of inaction, the second as that of fight against contagion and the third as the antiseptic period, recorded a mortality of 9.31, 2.32 and 1.05 per cent., respectively. On the other hand, as many patients died as previously at the Clinique, where Depaul and Pajot, who did not believe in the bacterial nature of the disease, continued to use the old methods.

With the gradual development of aseptic technic and more rigid precautions for the prevention of infection, better and better results were obtained, so that Mermann in 1907 was able to report a septic mortality of only 0.08 per cent. in 8,700 patients delivered under his supervision in Mannheim. Pinard in 1909 recorded a net mortality of 0.15 per cent. in 45,633 deliveries in the Baudelocque Clinic during the eighteen years ending with 1908; while in the same year Markoe recorded a percentage of 0.34 in 60,000 women delivered by the Society of the New York Lying-in Hospital.

At the present time it is safe to say that in well-regulated hospitals the mortality from puerperal infection is less than 0.25 per cent. This is in great contrast with the average mortality of 3 to 4 per cent. observed throughout the world prior to the introduction of antiseptic methods, and means that only one woman now dies as compared with fifteen or twenty formerly. Moreover, the criterion of excellence in lying-in hospitals is now not so much the actual mortality as the morbidity of patients; namely, the percentage in whom the temperature rises to 38 C. or 100.4 F. during the first ten days of the puerperium.

This improvement is astounding, and at the present time it is safe to say that fewer deaths from infection occur in well-regulated lying-in institutions than in private practice, notwithstanding the fact that in the former the patients are freely used for clinical instruction. In this regard Dohrn and Florence Nightingale were poor prophets, as the former stated that such results would never be attained; while the latter held that hospitals could not be rid of puerperal infection as long as they were used for the instruction of students.

This revolution must be attributed to animal experimentation, which made possible the demonstration that definite bacteria are the cause of wound infection, and that one of its varieties—puerperal infection—is due to the introduction of pyogenic bacteria into the birth canal of parturient women, and can be prevented by appropriate means. Of course, it may be urged that far-seeing men, such as Gordon, Holmes, Semmelweis and Tarnier realized the contagious nature of puerperal fever long before bacteriology became a science. They were not, however, able to impress their belief on the profession, and consequently no improvement was observed until the bacterial nature of the disease was clearly demonstrated. Formerly, the obstetrician groped in the dark in his attempt to identify the unknown contagion, if he even believed in its existence; while now we know exactly with what microorganisms we have to deal, and the means to adopt in order to overcome them.

At the present time, puerperal infection is no longer regarded as a visitation of Providence, but is attributed directly to the introduction of bacteria following a "break" in aseptic technic; and, whenever a case occurs in a well-regulated hospital, the director immediately begins to inquire how it happened, and, having found the source, is at once able to put a stop to further spread of the disease.

2. *THE APPLICATION OF ASEPTIC TECHNIC TO OBSTETRIC OPERATIONS*

The same factors which led to the disappearance of puerperal fever from lying-in hospitals and made possible the wonderful advances in general surgery, played an identical part in revolutionizing the results following the various operative procedures in obstetrics.

This is most strikingly illustrated by contrasting the results following Cesarean section and symphyseotomy or pubiotomy during the preantiseptic period and at the present time. Even as late as 1886, Dr. Robert Barnes wrote:

> The Cesarean section occupies a doubtful place between conservative and sacrificial midwifery. It is conservative in its design, in its ambition; it is too often sacrificial in fact. It is resorted to with a feeling akin to despair for the fate of the mother, which is scarcely tempered by the hope of rescuing the child. It is looked upon by the great majority of obstetricians as a last desperate resource, as the most forcible example of that kind of surgery which John Hunter regarded as the reproach of surgeons, being a confession that their art was baffled.

From 1787 until 1879, when Tarnier reported his first operation under antiseptic precautions, not a single successful Cesarean section had been performed in Paris; while Lusk, in the early eighties, was the first successful operator in New York. Indeed, as late as 1887, Harris stated that Cesarean section could be performed more safely by the horn of an infuriated bull than by the most accomplished surgeon in the best-equipped hospital in America. In support of this statement, he collected from the literature nine instances in which the abdomen of pregnant women had been ripped open by the horn of an infuriated bull, with five recoveries; whereas, only two mothers had survived the eleven Cesarean sections which had been performed in New York up to that time.

This horrible mortality was revolutionized by two factors: namely, the development of antiseptic surgery, and the description by Sänger in 1882 of a proper technic for suturing the uterine incision. The results following their adoption were so striking that Caruso was able to report that in 135 operations performed between the years 1882 and 1888, the mortality had been reduced to 25.56 per cent. Following the employment of more rigid technic and the proper selection of cases, this was gradually lowered, so that at the present time Cesarean section is undertaken by competent operators without hesitation.

When performed either in the last weeks of pregnancy or at the very beginning of labor, its mortality should not exceed that of ordinary gynecologic laparotomies, which is between 1 and 2 per cent. This striking revolution is due entirely to the development of aseptic surgical technic and to the restriction of the operation to uninfected women, who have not been subjected to the exhaustion incident to prolonged labor.

Exactly the same story can be told concerning symphyseotomy and pubiotomy. The former was first performed in 1777 by Sigault, and immediately afterward enjoyed a short-lived popularity, but soon gave such discouraging results that it was abandoned. Harris was able to collect reports of 70 cases up to 1858, with a maternal and a fetal mortality of 37 and 67 per cent., respectively.

The operation was resuscitated in Naples shortly afterward, and between 1866 and 1880, fifty operations were done, with a maternal mortality of 20 per cent. Following the introduction of antiseptic technic, it came into more general use, and Neugebauer in 1893 calculated that the mortality had fallen to 11.1 per cent.; while Mayer in 1908 stated that it had become still further reduced, but was still as high as 6 per cent. In view of the relatively high death-rate, and the more satisfactory results following Cesarean section, the operation gradually fell into desuetude, but was resuscitated again in 1897 under the form of pubiotomy.

Owing to the further development of aseptic technic, and the exact recognition of the character of cases susceptible to it, the mortality of pubiotomy has been kept within low limits, so that in May, 1910, I was able to collect from the literature reports of 518 operations performed by less than twenty operators, with a gross mortality of 1.9 per cent. In my clinic thirty odd pubiotomies have been done with no maternal deaths, while Roth has just reported eighty-five operations from Leopold's clinic with two deaths.

Similar improvement has occurred in the results following all other obstetric operations—forceps, version, induction of labor, *accouchement forcé*, etc. Unfortunately, it must be admitted that owing to the comparative immunity from danger there has developed a tendency on the part of many to resort unnecessarily to operative procedures, when Nature alone would have brought about a happy termination. Notwithstanding such tendencies, however, the general result is most creditable, and stands out in wonderful contrast to that of the past, and has each year been the means of saving the lives and diminishing the sufferings of thousands of women.

In this connection, one cannot reiterate too strongly that all of these advances must be traced back to the same cause, namely, the development of bacteriology and of aseptic surgical technic, both of which in turn are entirely dependent on the employment of animal experimentation.

3. *THE RECOGNITION OF THE BACTERIAL NATURE OF CERTAIN INFECTIOUS DISEASES IN THE NEW-BORN CHILD*

In times past, probably the most important disease of this group, occurring in lying-in hospitals, was the so-called puerperal fever of the new-born child. This condition, which was studied particularly by Schindler, Trousseau, Lorain, Hecker and Bühl, Müller and others, occurred particularly when the hospitals were ravaged by puerperal fever, and was due to the infection of the child during labor, or shortly afterward. In the first case, the amniotic fluid became infected during the course of a prolonged labor with concomitant infection of the air passages of the child with subsequent development of bronchopneumonia; while in the latter case, infection occurred through the stump of the umbilical cord. In either event, the disease was extremely fatal and only a small proportion of the infected children escaped, while autopsy showed one or more of the protean manifestations of wound infection.

Some idea of its incidence may be gained from the fact that a mortality of 7.62 per cent. was observed in the 18,329 children delivered in the Vienna Hospital prior to the work of Semmelweis. Following the employment of the precautions against puerperal fever which he recommended, the fetal death-rate was so markedly reduced that Bednar, who had charge of the Foundling Asylum, stated "that the disease of the children [blood sepsis] had almost entirely disappeared in consequence." Lorain noted a similar connection in the Maternité of Paris and reported that in 2.567 labors occurring during the year 1854, 5.7 per cent of the mothers and 7.5 per cent. of the children were lost, and the high mortality continued until antiseptic precautions were introduced by Tarnier. Hugenberger, likewise, estimated that the average fetal mortality in the St. Petersburg Hospital was 2.6 per cent., which rose as high as 14 per cent. during puerperal fever epidemics; while Hecker and Bühl observed an even higher death rate.

At the present time this condition is observed but rarely, and then only in the case of women who are admitted to the hospital already infected, when the bacteria contained in the amniotic fluid gain access to the child and give rise to infection.

As long as epidemics of so-called fetal puerperal fever occurred, comparatively little attention was paid to the actual mode of infection, but with the subsidence of the disease, the question was more carefully studied. It was then found that the portal of entry was usually through the stump of the umbilical cord, and this type of infection persisted for several years after puerperal fever had practically disappeared from lying-in hospitals.

Occasionally it caused a terrible mortality, and Paquy refers to the experience of Meynet, who lost 17 per cent. of the children cared for in a crêche in Lyons. Moreover, Runge stated that he had observed a mortality of 4 per cent. in Strassburg, as well as nineteen deaths in the Charité in Berlin during the first six months of 1880. His investigations showed that the umbilical arteries were usually involved, while infection occurred only exceptionally through the vein.

Following the introduction of antiseptic methods in caring for the stump of the umbilical cord, this variety of infection rapidly disappeared, so that at present in well-regulated hospitals it occurs only once in many hundred cases. We now hold that the condition always results from bacterial invasion, which is usually streptococcic in character; and we are forced to attribute the great diminution in its occurrence to the recognition of its true nature, which was made possible only by the development of bacteriology, which is based on animal experimentation.

Formerly, large numbers of new-born children died each year from tetanus, and Collins stated that during his mastership at the Rotunda in Dublin, one-fifth of all children, dying within the first fortnight after delivery, perished from it. He also referred to the epidemics observed during the mastership of Dr. Clarke, who said "At the conclusion of the year 1782, of 17.650 infants born alive in the hospital, 2,944 died within the first fortnight, and nineteen out of twenty of these died of nine-day fits." This indicates a total fetal mortality of 16.6 per cent., of which 95 per cent. was due to tetanus. This epidemic was held in check by the greatest attention to ventilation and cleanliness, but that the disease was not entirely eradicated is shown by the experience of Collins forty or fifty years later.

Similar epidemics have also been noted in other parts of the world, one of the most remarkable having occurred in the Island of St. Kilda, and was described by Mitchell in 1865. In this epidemic, 67.2 per cent. of all new-born children died, and the horrible death-rate continued until antiseptic methods of caring for the cord were introduced, when Turner reported that dusting the stump with iodoform had led to its complete disappearance. Until comparatively recently, the negro race in the South was often decimated by tetanus neonatorum, and the extent of its ravages may be gained from the following quotation from Grier:

> We have known more than one instance in which, of the births for one year, one-half became the victims of this disease, and that, too, in spite of the utmost watchfulness and care on the part of both planter and physician. Other places are more fortunate, but all suffer more or less, and the planter who escapes a year without having to record a case of trismus nascentium may congratulate himself as being more favored than his neighbors, and prepare himself for his own allotment, which is surely and speedily to arrive.

Similar conditions likewise obtained in Jamaica, and as early as 1835 Maxwell reported:

> From observations I have made for a series of years, I found that the depopulating influence of trismus neonatorum was not less than 25 per cent. It scarcely has a parallel on the bills of mortality.

Prior to the isolation of the tetanus bacillus, the condition was attributed to filth and impure air, but with the recognition of its specific cause and the employment of aseptic methods in the treatment of the umbilical cord, it has practically disappeared, and in more than 10,000 newly born children under my supervision I have never encountered a case. This advance, just as all the others to which I have referred, must be attributed solely to the employment of animal experimentation, for without its aid the tetanus bacillus could not have been isolated, nor its characteristic pathogenic properties demonstrated.

4. THE BIOLOGIC TESTING OF ERGOT

This drug, which is now so freely employed throughout the civilized world for the control of postpartum hemorrhage by the stimulation of uterine contractions, was first described medically by Dr. John Stearns of Waterford, N. Y., in 1808; while we owe the first dissertation on its physiologic action to Prescott of Boston in 1822. Following this, its complicated constitution has given rise to almost countless investigations, and pharmacologists are not yet in agreement concerning its active principles.

Some of the most important contributions to the action of the drug we owe to Kobert, Jacoby, Grünfeld, Barger and Dale. Ever since its employment for medicinal purposes very conflicting statements have been made concerning its active principles and physiologic action, and it was not until after the careful studies of Grünfeld that the cause for the discrepancy was recognized. He found that the powdered drug rapidly lost its medicinal properties; and while a certain preparation might be very potent when first prepared, it so rapidly deteriorated as to be practically without physiologic effect after being kept for four or five months. The recognition of this fact led to the necessity of devising some method for testing the physiologic activity of the various preparations of ergot before putting them on the market.

Unfortunately, no method of chemical analysis or assay has as yet been devised to enable manufacturing chemists or physiologists to determine the value of a given preparation, so resort was necessarily had to biologic or physiologic tests for the purpose. *From the earliest* times it had been noted that an efficient preparation would lead to marked bluing, and eventually to gangrene of the comb and wattles of the rooster; although later investigations tended to show that such a result was not necessarily an index of its action on the uterus, as it had been demonstrated that the gangrene-producing properties were quite independent of those causing uterine contraction. Consequently, other modes of investigation became necessary. Kurdinowski determined its physiologic activity by testing its effect on the isolated uterus, Kehrer, instead, used thin slices from the uterus of freshly killed pregnant animals, while Cronin and Henderson studied in animals its effect on the blood-pressure.

According to Crawford, most manufacturing chemists at the present time test its efficiency on the cock's comb and wattles; although he states that it would be preferable to employ the living uterus, as recommended by Kurdinowski and Kehrer. In any event the manufacturing chemist must resort to some such form of animal experimentation in testing every specimen of ergot which he uses for the manufacture of the preparations sold to the public; and that means that no woman can take ergot for the control of hemorrhage without being the recipient of at least one of the advantages which has been gained from animal experimentation.

5. *THE DEMONSTRATION OF THE INTERNAL SECRETION OF THE OVARIES*

Although the atrophic changes occurring in the internal genitalia following the menopause, or the operative removal of the ovaries, were long ago recognized, the possibility that they were a manifestation of the disappearance of an internal secretion, formerly elaborated in those organs, was not suspected until after the appearance of Brown-Séquard's suggestive article on the subject.

As long as such a supposition was not supported by facts capable of demonstration, it was not possible to be sure of its correctness, or to deny that the changes in question were neurotic in origin. The experimental work of Knauer, Gregoriff, Mandl and Bürger, Marshall and others, however, conclusively demonstrated that the ovaries elaborate a definite secretion, which serves to regulate the nutrition of the internal genitalia, as well as to exert a definite effect on the entire organism. Moreover, it was clearly shown that the organs could be removed from their usual site and transplanted to other distant portions of the body, and still prevent the degenerative changes which usually follow their removal. As all nervous connections had been severed at the time of operation, it was evident that the only manner in which such an influence could be exerted was by means of an internal secretion, which gained access to the blood-current.

Other experiments showed that the transplanted ovaries functioned perfectly, and if implanted in a suitable location, produced ova which could be fertilized. Such findings were not merely of scientific interest, but possessed a distinctly practical bearing in that they suggested the possibility of transplanting the ovaries in human beings, as well as the employment of ovarian tissue extract in the treatment of various conditions resulting from imperfect ovarian secretion, more particularly the distressing symptoms which frequently accompany the menopause or follow the removal of the ovaries. Not a few operators, when obliged to remove both tubes and ovaries on account of disease, have implanted *healthy portions of the latter* on the uterus or broad ligaments, in order to prevent the occurrence of an artificial menopause in young women. Less frequently, the ovaries of one woman have been implanted into *another, in the hope* of reestablishing the menstrual function, or even making possible the occurrence of pregnancy. The former result has been attained in numerous instances, while the latter has resulted successfully in at least two cases. Those who are interested in the subject are referred for details to Martin's article which contains full references to the literature up to 1908.

Fraenkel, in 1903 and 1910, published two important contributions on the function of the ovaries, which were based entirely on animal experimentation. He apparently showed that the corpus luteum should be regarded as a temporary gland which produces an internal secretion, whose function, at least in part, is to bring about the changes in the internal genitalia necessary to permit the implantation of the fertilized ovum. Furthermore, his experiments rendered it probable that the continuance of the secretion was essential for the preservation of pregnancy during its early periods, but was not necessary later; and thus afforded an explanation for the clinical observation that removal of the ovaries early in pregnancy is usually followed by abortion, whereas their removal later has no effect.

6. *EXPERIMENTAL STUDIES CONCERNING THE NATURE OF THE TOXEMIAS OF PREGNANCY*

Up to twenty years ago our ideas concerning the nature and etiology of eclampsia were but little clearer than in 1843, when Lever first described the presence of albumin in the urine of eclamptic women, and held on that account that it was merely a variety of nephritis.

Following the experiments of Rivière in 1888, and those of Tarnier and Chamberlent a few years later, in which it was apparently shown that the toxicity of the urine of eclamptic women was greatly decreased for experimental animals, while that of the blood-serum was markedly augmented, the belief gained ground that the condition was toxemic in character, and was due to the retention within the organism of certain substances which were ordinarily excreted through the kidneys. Following these observations, the experimental study of eclampsia has occupied the attention of large numbers of investigators, and although the subject has not yet been thoroughly elucidated, the conviction is growing stronger and stronger each year that the disease is a toxemia, which is in some way dependent on the pregnancy, and in all probability connected with abnormal processes either within the body of the fetus or placenta.

It would carry us too far afield to attempt even to enumerate those who have taken part in such investigations, but the contributions of Volhard, Veit, Hofbauer, Lichtenstein, Freund, and Thies deserve especial mention. Moreover, we might refer, in this connection, to the fact that it is only by means of animal experimentation that we have learned the part which the secretion of the thyroid gland plays in regulating the metabolism of pregnancy.

Although none of these experimental investigations have entirely cleared up the etiology of the affection, they have nevertheless served to impress on us its toxemic nature, and have taught us that the treatment *par excellence* consists in the prompt evacuation of the uterus. Moreover, I consider that if the matter is ever to be settled, it can only be accomplished by the aid of animal and biochemical experimentation.

7. THE EXPERIMENTAL PRODUCTION OF FETAL DEFORMITIES

If it is permissible to designate as animal experimentation the various procedures to which the fertilized eggs and the developing embryos of various animals are subjected for the purpose of producing anomalies of development, we can point to a field which has not only markedly advanced our knowledge concerning the normal mechanism of growth and the mode of production of monstrosities, but one which is destined to add greatly to the comfort of the human race.

In times past, the birth of monsters or of children afflicted with congenital deformities was attributed to the anger of the gods, to witchcraft or to some malign influence to which the pregnant woman had been subjected. With the advance of knowledge and the passing of superstition, such views gradually disappeared; but, on the other hand there is scarcely a woman in America at the present time, who does not firmly believe in the doctrine of maternal impressions, and who, in case of the birth of a monstrous or deformed child, will not attempt to trace its origin to some unpleasant sight or experience to which she had been exposed during pregnancy.

Persistence in the belief in maternal impressions is each year a source of great unhappiness to thousands of women, who, after some trivial occurrence, such as seeing a mouse or a rabbit, are convinced that their child will be "mouse-marked" or hare-lipped in consequence, and who do not dismiss their fears until a perfectly normal and well-formed child has been born. Indeed, I feel that I am safe in stating that no one who has not considerable experience with pregnant women can appreciate the extent of the suffering and dread resulting from this superstition.

The new science of experimental embryology and teratology has shown clearly that such an occurrence is impossible, as in the vast majority of cases, the changes which were attributed to it developed in the earliest periods of pregnancy, whereas the "maternal impression" to which a given deformity was attributed did not occur until a much later date.

Geoffroy Saint-Hilaire, Allen Thompson and Féré were the first investigators to attempt the production of deformities by subjecting the developing egg to various influences, but it is only within the last twenty-five years that the matter has seriously engaged the attention of scientific men. During this period, however, the work of Pflüger, Dareste, Roux and Born has put the subject on a scientific basis, as they have shown beyond question that pricking certain portions of the segmenting ovum with a needle, encircling it with a ligature, or subjecting it to certain chemical influences, will inevitably be followed by definite deformities, and they were enabled in this way to produce at will, not only single, but double monsters of the most varied type.

Further research along these lines has been particularly prolific in this country, and the investigations of Loeb, Morgan, Wilson, Bardeen, Harrison, Stockard and many others, has led to most astounding results, which have revolutionized our ideas of teratology. These investigators have shown beyond peradventure that practically all of the deformities with which we meet at the time of labor can be produced at will by subjecting the early ovum or embryo to various procedures. Thus, it is possible to produce spina bifida, cyclops, headless or double monsters, as well as those lacking extremities or having accessory ones, merely by changing the experimental conditions.

As the result of these investigations, it has been definitely proved that, with the exception of certain well-marked hereditary deformities, the great majority of monsters are the result of some interference with the normal growth of the ovum in the days immediately following conception, and not to later influences.

Indeed, at the present time the evidence available seems to indicate that the entire doctrine of maternal impressions is a superstition which will sooner or later entirely disappear, and this result will be hastened as the work of the experimental teratologist becomes generally known.

CONCLUSION

In conclusion, it may be said that while the benefits which obstetrics have derived from animal experimentation are not immediately apparent, they are nevertheless very real, and have led to revolutions in obstetric practice and to results which are but little realized by the general public. I think that I am safe in asserting that had animal experimentation led to nothing more than the discovery of the bacterial nature of puerperal fever, whereby a means was provided for doing away with its former hideous mortality, it would abundantly justify the sacrifice of all the animals which have thus far been used for experimental purposes. Think of the millions of lives which have been saved, if we accept Boehr's calculation, that formerly every thirtieth married woman was inevitably doomed to perish from puerperal infection. Fortunately, this is not the only benefit even in obstetrics, which can be ascribed to animal experimentation, as the increased security following operations and the marked decrease in the mortality of new-born children are equally attributable to it. Indeed, it may be truthfully said that every time a physician cleanses his hands preparatory to attending a woman in labor, he is rendering a tribute to animal experimentation; although unfortunately, the world at large, which benefits from it, does not recognize its significance. I feel that there is every reason to expect that animal experimentation will play as large a part in developing our ideas in the future as in the past, and I confidently believe that the problem of eclampsia and the other toxemias of pregnancy, as well as the cause of labor and all that that implies, will eventually be solved by its means.

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Prognosis in Neurasthenia with Gastralgia.—The prognosis is largely one of neurasthenia itself. Remove the cause and the associated gastric pain and disturbance will gradually disappear. No patient with neurasthenia is rapidly cured. Even the all-potent mental effect on the patient of the inspiring personality of doctor or nurse, or the firework impressions of electrical treatment, such as high-frequency, however much they may conduce to the patient regaining hopefulness of cure, cannot result in a rapid recovery. The disease is a slow undermining and weakening of neurons and the cure is a gradual reconstruction and strengthening, which are greatly aided, it is true, if the sufferer can be persuaded that he is on the way toward health once again.—R. A. Fleming, in the *Practitioner*.

TREATMENT OF STUTTERING

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As "stutterers" we designate individuals showing certain peculiarities of speech. One stutterer, for example, will make spasmodic contraction of the lips, tongue, etc., whereby a word like "berry" will be pronounced "b-b-b-berry." Another will open his mouth wide and produce an "a-a-a-a-" before he can say a word. Another will find himself suddenly unable to speak at all at the beginning or in the middle of something he wants to say. Still others are quite unable to speak certain words; one young man could never speak the name of his town and was obliged always to buy his railway ticket to the next town beyond; one lady would find herself at a ticket office suddenly speechless and unable to tell what ticket she wanted, while an impatient crowd of commuters gathered behind her.

"Stuttering" is sometimes called "stammering"; the words in English mean exactly the same thing. The word "stammer" is superfluous; it should be avoided because it leads to confusion with the German word *Stammeln,* which means lisping, and not stuttering.

Laryngeal cramps are a never-failing symptom of stuttering. The muscles in and around the larynx become tense and fixed. The tone from the larynx is always monotonous and hard, and it is often husky. It is not unusual to find a patient who never has any other symptom in the presence of the physician except the monotonous laryngeal tone. This most fundamental of all the symptoms of stuttering seems to have escaped all writers on the subject.

Cramps and spasms of the muscles of enunciation (lips and tongue) are the ones most apparent to the observer. The lips may be pressed tightly together for a short or a long time when the patient tries to say "p" or "b." In other cases they will open and shut, producing a series of "p"s or "b"s instead of one. The tongue may be pressed so tightly against the palate that the "t" or the "d" is two, three or ten times too long. All the sounds may be similarly affected.

Less frequent, but more striking, are the contractions of muscles not usually used in speech. One patient will twist his head whenever he stutters badly; another will screw up one eye; another will contort his whole body, etc.

An *almost constant symptom* is excessive rapidity of speech. In some cases this is to be attributed to the desire of the stutterer to get his words out before he is caught, or before any one can interrupt him. In most cases it is the expression of nervous anxiety.

A never-failing symptom is the *patient's lack of confidence* in his ability to speak correctly. In some cases the mere thought "Shall I be able to say that word?" is *sufficient* to make it absolutely impossible for the person to say it. The stutterer always lives with the fear that his speech may "go back on him." Many a one is always thinking a few words ahead of what he is saying, being on the lookout for some word he thinks he cannot say. When such a word is coming, he avoids it by selecting another that will serve just as well. One patient passed his life, practically, in always avoiding words; this mental work added to that of a normal man kept him in a condition of nervous prostration.

The simplest form of stuttering is that of "pure habit." Such a case occurs *rather frequently* in instances in which a younger child unintentionally copies the stuttering of an older one. If the stuttering does not go beyond the stage of pure habit, the younger child drops his stuttering involuntarily when the older one is removed or cured.

The stutterer nearly always goes beyond the habit stage. People laugh at him, *mock him, scold him,* threaten him with punishments, or whip him. Usually he is *obliged* to repeat words he stumbles on. He is made to go through reading and speaking exercises. Extra hard words are given him to practice on. Speaking becomes a torture for him. A new element, the "fear of displeasing and of appearing ridiculous," produces the "fright stage." The stuttering is now a distinct psychoneurosis that may have the most far-reaching consequences.

The *curative treatment* of stuttering is based on the following principles:

The "principle of a new method of speaking" is founded on two facts; first, that the stutterer always speaks in an abnormal voice, which we may call the "stutter voice"; and, second, that he does not stutter when he expresses his ideas in any other voice, such as the singing voice.

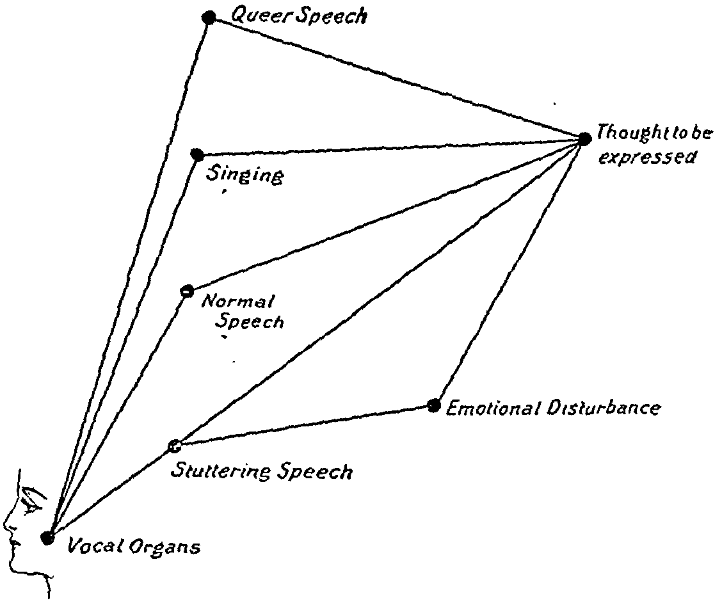

Diagram showing how [illegible] interfere with attempts at normal speech, [illegible] employment of an unnatural voice—queer [illegible] ifficulty and the person does not stutter, because the attention is distracted by the attempt to sing or employ queer speech.

The scheme shown in the illustration expresses these two facts. When the stutterer tries to express a thought in his usual way, *the action of his speech is interfered* with by the emotional condition—embarrassment or fear —that is aroused at the same time. He, *therefore,* speaks in his stutter voice. If he tries to express the thought in any other way than the usual one, the emotional disturbance does not arise. This explains the familiar fact that a stutterer never has any trouble when he sings what he wants to say.

Since the patient does not stutter if he speaks in his usual way, he can be taught to speak in some kind of an odd voice. The stutterer can at any time speak without stuttering, if he will use an abnormally low voice, or an abnormally high one, or if he will drawl the vowels or slur the consonants, or again if he will speak in a choppy staccato voice, and so on. These are the methods of the "stammer-schools" and "stutter-curers." They are objectionable because they leave the patient with a queer voice; people often tell him that the cure is worse than the disease. The patient usually gives up the queer voice after a while and becomes a stutterer again because the queer voice itself produces embarrassment and he naturally feels like discarding it.

The essential point is that the stutterer should feel his acquired speaking voice to be different from his stuttering voice. One patient could never dictate to his stenographer. I found that he could not distinguish one note from another in music; so I told him to sing what he wanted to dictate. He did so without the slightest hesitation or difficulty, in what he supposed to be a singing voice; it did not differ, however, from his usual voice, except in being slightly easier and more natural. As long as he thought he was singing he did not stutter, although he did not really sing. The cure was a failure because he refused "to make a fool of himself by singing to his stenographer." To inform him of the fact that he did not sing would have destroyed the belief that he was singing and would have made him a stutterer again. There was no way out of the dilemma.

There is another way of speaking which is unusual to the stutterer, namely, the way in which normal persons speak. When he speaks in this way, he does not and cannot stutter. The therapeutic procedure on this principle will, therefore, be to teach him to speak normally. The various abnormalities will disappear when the patient has thoroughly learned the exercises below.

The "principle of habit-formation" implies that the new way of speaking is to be drilled into the patient till it becomes a habit.

The "principle of spontaneity" is requisite because, when the patient has learned to repeat perfectly, he will still be unable to do so when he speaks of his own accord. A gradually increasing amount of spontaneous speech is introduced into the treatment.

The "principle of increasing embarrassment" arises from the fact that, even when the patient has learned to speak perfectly in the presence of the physician or the instructor, he is unable to do so under other circumstances. The patient is taught to speak properly before a few persons or before a class. Still more difficulty is introduced by making introductions, speaking over the telephone, buying in stores, reciting in school, etc. For the introduction exercise the stutterer practices at first privately and then with a gradually increasing number of strangers.

The "principle of correct thinking" indicates that the abnormal habits of thought, which a stutterer always acquires to a greater or less degree, are to be corrected by appropriate exercises. A frequent abnormality is that of getting into a daze at each effort to think. The patient finds that he cannot decide promptly. It was typical of one patient that on being asked "Which kind of dog do you like best?" he hesitated and grunted, and finally said, "I really cannot say which I like best." He was cured by being obliged to give some kind of decision quickly, regardless of whether it was correct or not. The trouble was due to the mental flurry or daze that had become a habit. Another patient, when leaving a house, found himself unable to say "Good-bye" because some friends were waiting for him. The trouble arose from a conflict between the motive to hurry after the friends and the motive of not offending the host; this produced a mental daze that left the patient speechless.

The following exercises present an outline of treatment that may be abbreviated as desired. Each step of each exercise is to be repeated a number of times. The exercises are to be repeated as often as may be needed.

EXERCISE I. BREATHING IN PREPARATION FOR SPEECH

A. The patient raises the arms fore upward inhaling and lowers them side downward exhaling. He repeats this and each of the following at least four times.

B. He raises the arms side upward inhaling, and lowers them side downward singing "ah."

C. Likewise with the other vowels.

D. The patient raises the arms upward inhaling; lowers them side downward singing "ah" on middle C and upper C (over the octave).

E. Likewise singing words of one syllable.

The object of this exercise is to develop consciousness of breathing and to form a habit. It also teaches the "octave twist."

EXERCISE II. FLEXIBILITY

A. The patient sings the vowel "ah" on each note of the octave.

B. He strikes the lowest note of the octave and then the highest; sings the vowel "ah" half on the lowest note, half on the highest.

C. He sings the vowel continuously (*portamento*) up the octave. He should note the "fog-horn" effect, the "octave twist."

D. He practices singing the different vowels up the octave in this way.

E. He sings a series of words with long vowels, running the vowels up in the same way.

F. The instructor speaks a word with the octave twist. The patient repeats it.

G. Same with a sentence, putting the octave twist on the first important vowel.

H. Same with a poem, putting the octave twist on the first important vowel in each line.

I. Same with prose, putting the octave twist on the first important vowel in each phrase.

J. The instructor speaks sentences and questions with the octave twist. The patient repeats the sentences and answers the questions.

The object of this exercise is to break up the hard monotonous laryngeal tone. It alone makes the voice normal when it is skilfully done, because it is impossible to stutter and to use the octave twist at the same time.

EXERCISE III. READJUSTING THE VOWELS

A. The patient speaks each of the vowels in a long drawn out tone, going over the octave, e. g. "a-h, o-h, etc."

B. He speaks a short sentence, omitting all the consonants but lengthening the vowels; for example, the sentence "A snow storm is here" will be spoken "A- o- or- i- ere-."

C. He repeats the same sentence, lengthening the vowels and putting in the consonants only faintly.

D. He learns to read and converse in this way.

The object is to teach the patient to weaken the consonants and to speak slowly.

EXERCISE IV. SMOOTHNESS

A. Repeat sentences making every important vowel at least three times as long as usual. These vowels should be spoken with the octave twist. The words are to be linked together, that is, there are to be no pauses or interruptions. The method may be indicated in this way: "Thesu---nisshi---ningbri---ghtly."

B. Questions and answers and short sentences are to be spoken and read likewise.

The object of this exercise is to teach the patient to shorten the consonants, as these are the sounds that cause him difficulty. At the same time it teaches him to speak smoothly and easily. These are factors in forming a voice that is both normal and new.

EXERCISE V. SLOWNESS

With a metronome beating fifty-four times a minute, the instructor and patient read, repeat sentences, ask and answer questions, etc., putting one syllable on each beat. A breath is to be taken before each sentence; all the vowels are to be lengthened and the consonants to be weakened, as described in the preceding exercise. The first important vowel in each phrase is to have the octave twist as described in Exercise II. The whole sentence must be spoken smoothly and softly without the slightest jerkiness. The object is to force the patient to speak slowly.

EXERCISE VI. REGULATION OF BREATH IN SPEAKING

The instructor and the patient are to hold sticks. Each time before speaking, the stick is to be raised sharply while breath is taken vigorously. After waiting one second with bated breath, the person speaks.

A. The instructor speaks a short sentence; the patient repeats it.

B. The instructor asks a question; the patient answers it.

C. The instructor assigns a topic on which the patient is to say something. The patient must raise the baton and draw breath before each statement.

D. The patient is required to give a description of some object in the room in a similar way.

This exercise is needed only when the patient has difficulty in breathing before each sentence.

EXERCISE VII. STARTING A SENTENCE

A. The patient sings short sentences, striking a note on the piano as the first syllable is sung. Instead of using the piano, he may strike a bell or a table or hit his knee or make a gesture as in beating time.

B. He repeats the same sentences, with the same accompaniment in the same way, but singing only the first word.

C. He speaks them with the same accompaniment on the first syllable.

D. Question and answer are sung with the accompaniment on the first syllable.

E. As before, but only the first syllable is sung, the rest being spoken.

F. As before, but all spoken.

G. The patient tells a story, singing the first word of each sentence with the accompaniment.

H. He tells a story without singing but accompanying each first syllable.

This exercise is needed only when the patient has special difficulty in starting. The accompaniment is to be gradually eliminated.

EXERCISE VIII. DEVELOPING EXPRESSION

A. The instructor repeats some poem with expression; the patient repeats it line by line, exactly imitating the expression.

B. The instructor states a certain fact in a very melodious and expressive way; the patient repeats it exactly.

C. The instructor gives a question as in B; the patient repeats it exactly.

D. The instructor gives a question in a very melodious and expressive voice; the patient answers it by taking a few words from the question.

E. The instructor gives a question as before; the patient answers freely, but with the same melody and expression as in the question.

F. Poems and prose pieces are recited with proper expression.

G. Dialogues are read with the proper change of expression for each character.

H. Jokes are read and spoken with an effort to give the most effective expression.

During these exercises no correction of faults is to be made. The entire attention is to be concentrated on the correct expression

EXERCISE IX. CONFIDENCE IN READING

A. The instructor and the patient are to read poems together. Then they are to read alternate lines together and alone.

B. Same with sentences.

C. They are to read a prose speech together, but the instructor is to remain silent occasionally.

D. The patient is to read a prose piece, but the instructor is to join in at the first intimation of difficulty.

E. The patient and the instructor are to read sentences and questions from a traveler's manual, sometimes together, sometimes alone.

F. The instructor and the patient are to read parts in a drama, the instructor joining in whenever the patient has difficulty.

G. The patient is to read a paragraph and then tell its contents in his own language.

EXERCISE X. CONFIDENCE IN SPEAKING

A. The patient calls out railroad stations with a megaphone; the voice must be clear and decided.

B. Same without the megaphone.

C. The patient makes geographical statements with and without the megaphone; for example, "The Atlantic Ocean is east of the United States."

D. He makes historical statements likewise (that is, with and without the megaphone); for example, "George Washington was the first president of the United States."

E. Question and answer likewise.

F. The patient relates a story or an incident likewise.

G. He makes a speech likewise.

H. He takes part in a debate likewise.

I. He takes part in a continuous story which is arranged as follows: One person tells a story which he makes up as he goes along; he suddenly stops and the next person is immediately to continue the story according to his own ideas; he, in turn, suddenly stops and the following person continues. This is kept up until the story reaches the first person.

J. A topic is assigned; the patient prepares a short speech to make on it and delivers it in the presence of the instructor.

K. Same in the presence of several people.

L. A speech is made impromptu on a given topic in the presence of the instructor.

M. Same in the presence of other people.

The number of the people is to be gradually increased until the patient feels ready to get up at any moment and make a short speech on any topic.

EXERCISE XI. CONFIDENCE IN BUYING

A. The patient with a number of objects before him is supposed to be a store-keeper; other people (or patients) go to the store, inquire about articles, discuss the prices and buy. This must all be done with proper attention to slowness and melody of speech.

B. The patient takes the part of the buyer.

C. The store is turned into a railroad ticket office with the patient alternately as ticket agent and as traveler. Various questions concerning trains, accommodations, etc., are to be asked.

D. The ticket office becomes the box office at the theatre; the questions are to include location and seats, exchange of tickets, etc.

E. When the patient can do this perfectly, the instructor accompanies him on actual purchasing expeditions to the stores.

EXERCISE XII. SCENES FROM LIFE

A. A group of people is supposed to be in some familiar situation; for example, eating at a restaurant, riding in an automobile, forming a box party at the theatre, etc. The instructor works out the situation by description, while all persons present, including the patient, make the appropriate remarks. For example, if the scene is at the restaurant, the instructor takes the part of the waiter while the other persons order what they wish to eat, discuss the bill of fare, etc. If the scene is at the theater, the instructor tells a story of the play while the persons discuss the incident, the house, their neighbors, etc. In the automobile party, the instructor takes the part of the chauffeur while the party travels to various places and discusses what has been seen.

B. Similar scenes are worked out, the patient taking the leading parts.

C. The group of persons is supposed to represent a club, the instructor occupying the chair. Various members are to make motions and discuss them, officers are to be elected, etc.

D. The patient is made chairman of the club.

EXERCISE XIII. SPONTANEOUS SPEECH

A. The patient says some word referring to an object placed before him pointed out; the word must have some application to or connection with the object. For example, concerning a book, he may say "large" referring to its size, or "black" referring to its color, or "read" referring to its use, or "table" referring to its position, or "yesterday" referring to something it reminded him of, etc.

B. He makes a statement slowly and melodiously concerning some object placed before him or pointed out to him.

C. He names the objects he sees on one side of the room, proceeding systematically from left to right and speaking slowly and melodiously.

D. He describes an object placed in front of him, using single words and proceeding systematically; for example, if a telephone is placed before him he will first use words referring to its appearance, then to its use, then to its faults, then to its history, etc. He should always adopt some such system in selecting words.

E. Same as D, but complete sentences are to be used instead of single words.

F. Short sentences are to be spoken concerning objects not seen but more or less familiar; for example, breakfast, a distant city, George Washington, Atlantic Ocean, etc.

G. A more extended account is required concerning similar objects as in F.

H. Some or all of the preceding exercises are to be carried out in the presence of additional people.

I. When this can be done perfectly, the patient is to be called on to make short speeches on any topics that may be given him.

J. He is to make speeches on topics of his own choosing.

The object of this exercise is to remove the daze—mental cramp—which many stutterers have when they begin to speak.

EXERCISE XIV. THINKING

A. The name of an object is called out. The *patient* calls out the name of some other object that suggests itself to his mind. If he is in doubt what to say, he chooses some object that is often seen together with the one mentioned. For example, on hearing the word "horse" he replies "cart." This process is called "association of ideas." For the present the patient is to associate deliberately, taking as much time as he wishes. He practices for several times with words like the following:

hand, foot, hair
shoe, glove, eye
coat, sock, motor

B. On hearing each of the words just used, the *patient* makes a sentence about it. It does not matter what the sentence states.

C. On hearing each of the words he makes a sentence defining it.

D. On hearing each of the words, he states some fact about the object implying something regarding its location or its use, or something that preceded it, or caused it, or followed it, or resulted from it, or had some relation to it.

E. Starting with any given word he lets the mind bring up a long series of thoughts. These thoughts should not revolve around the original word, but should pass away to other subjects. If necessary the rule may be adopted of obliging the mind to leave the original word within three associations.

The object is the same as in the preceding exercise.

EXERCISE XV. TELEPHONING

A. The patient calls some one on a private telephone, using the system of his town as nearly as possible. He first calls Central and then speaks with the person desired. He is to speak slowly and melodiously.

B. He takes the part of Central and then of the person called up.

C. He repeats A and B in the presence of other people.

D. He does some of the most difficult exercises over the private telephone with the instructor or some other person at the other end.

E. Using the public telephone, the patient puts his finger on the switch so that when he takes the receiver off the hook, the telephone is not connected with Central. Some one sitting beside him takes the parts of Central and the person to whom the patient wishes to speak. He carries out exercises as on the private line.

F. With the instructor close beside him, the patient calls up Central and then some friends; if he has the slightest hesitation the instructor will speak for him.

G. When he succeeds perfectly in the preceding, he tries the telephone independently. The instructor is to criticize his successes.

The fear of the telephone is very marked in most stutterers.

87 Madison Avenue.

THE DIAGNOSTIC VALUE OF THE BUTYRIC ACID TEST (NOGUCHI) IN THE CEREBROSPINAL FLUID *

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Of the large number of reports on the cerebrospinal fluid which have appeared in recent times, the great majority have been devoted to a study of changes which occur in the parasyphilitic diseases, and perhaps not *sufficient attention* has been paid to the value of routine diagnostic examinations in general hospital practice. Realizing the importance of establishing certain fundamental facts in relation to the newer tests, at the Michael Reese Hospital we attempted to study in a routine manner all the spinal fluids which came to our laboratory for diagnosis, and in this study especial attention has been paid to determining the status of the butyric acid globulin test devised by Noguchi.[1] Noguchi originally advocated his test for use in the diagnosis of cerebrospinal syphilis, general paresis, and of tabes dorsalis, but suggested that inasmuch as it is present in all inflammations of the meninges, it might prove of value in the diagnosis of tuberculous meningitis. The material on which this report is based has come from varied sources, and includes diseases of varied character. Over 150 cases have been studied; but, since many of our cases were from sources which prevented us from following them, this report is based on the ninety cases in which a diagnosis is fairly certain. I regret, however, that the inability to obtain autopsies is a source of error in the interpretation of disagreements between the clinical diagnosis and the findings of the laboratory examination. Furthermore, the series is rather small for very definite conclusions, but the general agreement in our results is sufficiently striking and suggestive to warrant their publication with the hope that more workers in this field will be able to study larger numbers of cases and thus contribute more definite knowledge.

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* From the laboratories of the Michael Reese Hospital, Chicago.

[1] Noguchi and Moore: The Butyric Acid Test for Syphilis in the Diagnosis of Metasyphilitic and Other Nervous Disorders, Jour. Exper. Med., 1909, xi, 604.

Although the technical methods employed in all our cases have been constant, the different character of the fluids made it advisable for practical purposes to adopt certain standards of procedure varying with the source of the fluid. For instance, better results are obtained when the spinal fluid from a patient suspected to have tuberculous meningitis is handled in a manner to facilitate the finding of tubercle bacilli, whereas, in those cases in which the examination may aid in the differential diagnosis between functional and organic nervous disorders, special stress is laid on chemical and cytologic aspects. In all cases, the first step employed is a bacteriologic culture on media containing hemoglobin. In cases of suspected tuberculous meningitis one tube of fluid is put untouched in the ice-box, and allowed to remain for at least twelve hours in order to permit the formation of the film which enmeshes the bacilli. As has been emphasized recently by Bybee and Lorenz,[2] practically all workers find the study of the cells most difficult, and no completely satisfactory method, either for the total or the differential count, has yet been devised. My experience with the total cell-count has been that the use of the ordinary red cell counting pipette with methylene-blue, gentian-violet or acetic acid gives results, which, while only partially satisfactory, are at least much better than those from the French method. The differential count is made from the sediment after centrifugalization for a half hour at about 1,800 revolutions, and stained with Wright's stain. In many instances, however, this procedure is eminently unreliable, as it is often impossible to differentiate the various cell types by this method. Far more valuable, in my experience, and much less difficult of interpretation, has been the use of some one of the methods for determining increased globulin content. In a recent careful review of the literature,[3] I found a fairly general agreement in the opinions expressed as to the relative diagnostic value of increased cell-count and increased globulin fraction. In normal fluids the number of cells present is from 0 to 5, 6, or even 8 per cu. mm., whereas the amount of protein is so small as to be unrecognizable by ordinary clinical methods. In all inflammations of the meninges, and in general paresis and tabes, there is an increase of the cells and of the protein. As a rule the increases in these two elements run parallel courses, and likewise the diagnostic significance of the tests is of about equal value. In my series the agreement was almost constant, but the two reactions were not always of equal value.

Numerous methods have been employed for the determination of increased protein, all based on the fact that the increase is due to serum globulin. In all tests the fluid must be free from blood. Nonne's[4] well-known Phase I has not been found to have the delicacy of some of the modifications, owing to frequent difficulties in differentiating a positive from a negative reaction. Ross and Jones[5] have modified the technic of procedure by making a ring test similar to Heller's nitric acid test in the urine. On two parts of a heat-saturated solution of ammonium sulphate in a test-tube they float one part of the fluid and look at the line of junction for the reaction. In positive cases an easily perceptible white line of precipitated globulin appears. Wherever it has been used, this reaction has met favor, and seems to possess about the same delicacy as the Noguchi test, with the possible exception that the line of junction is somewhat more difficult to read than is the Noguchi. This latter test, which is probably the most satisfactory at present, is employed as follows:

> One part (0.1 or 0.2 c.c.) of cerebrospinal fluid is placed in a test-tube, and to this is added five parts of a 10 per cent. solution of pure butyric acid in physiologic salt solution; the mixture is heated to boiling, and immediately one part of normal sodium hydrate added and the mixture again boiled. In the presence of increased globulin a definite flocculent precipitate occurs, either immediately, or within two hours. This definite precipitate must be differentiated from a faint cloudiness which normal fluids may give, but it requires only slight experience to recognize the difference between positive and negative reactions.

Properly to appreciate the diagnostic value of the study of spinal fluids it is necessary to remember that the spinal fluid is, in a diagnostic sense, analogous to the blood, and, as in the blood only a few tests of absolute value are known, so in the interpretation of the examination of spinal fluid most of the knowledge obtained is relative. An increased leukocyte count or an eosinophilia is a pointer of importance only when considered in relation to the clinical findings, and practically the only absolute diagnostic signs are those obtained by finding the specific etiologic agent or one of the few specific bacterial or chemical reactions like the Widal or the Wassermann. In the spinal fluid not too much can be expected, and it is well before discussing our cases to emphasize that only in exactly similar instances can absolute determinations be reached. The finding of the tubercle bacillus or the pneumococcus, or a positive Wassermann are the occasional high lights in routine study of cerebrospinal fluids; a positive Noguchi reaction does not mean any one disease any more than does a leukocytosis mean pneumonia. If, however, it can be shown that the Noguchi reaction is not present in any of the functional neuroses or psychoses, while it is present in certain organic diseases whose symptomatology resembles that of the neuroses, then its value as a diagnostic sign must be recognized; or if it occurs in *tuberculous meningitis and not in the numerous clinical* entities which may simulate this disease in children, it must be admitted into the group of signs which help to make the diagnosis of tuberculous meningitis. It is from the standpoint of relative usefulness that we wish to present the subject, and in doing so it seems better to consider our cases under groups showing similar clinical manifestations.

The first group to be presented is that of cerebrospinal syphilis, general paresis, and tabes dorsalis. It would be a waste of time and space to review here the extensive literature on the changes in the spinal fluid in these diseases. Suffice it to say that the salient features are an increase in the globulin and in total cell-count in about 90 to 95 per cent. and peculiarities in the differential count involving mainly the mononuclears, about the classification of which there is considerable discussion. The figures for positive Wassermann reactions vary from 50 to 95 per cent. The Noguchi and the Ross-Jones tests have proved of greater value than the original Nonne (Amsden,[6] McCampbell and Rowland[7]).

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[2] Bybee and Lorenz: A Report of Fifty Examinations of Cerebrospinal Fluids with Special Reference to the Cell-Count, Arch. Int. Med., 1911, vii, 38.

[3] Strouse: The Cerebrospinal Fluid in Syphilis and in Parasyphilitic Diseases, Interstate Med. Jour., 1911, xviii, 138.

[4] Nonne and Apelt: Ueber fractionirte Eiweiss-Ausfallung in der Spinalflüssigkeit von Gesunden, Luetikern, Funktionell- und Organischnervenkranken und über ihre Verwerthung zur Differentialdiagnose der Dementia Paralytica, Tabes Dorsalis, tertiaren und abgelaufenen Syphilis, Arch. f. Psychiat., 1907-08, xliii, 433.

[5] Ross and Jones: The Use of Certain New Chemical Tests in the Diagnosis of General Paresis and Tabes, Brit. Med. Jour., 1909, i, 1111.

TABLE 1.—CELL FINDINGS AND REACTIONS IN CASES OF CEREBROSPINAL SYPHILIS, GENERAL PARESIS AND TABES DORSALIS

Case No.	Diagnosis	Noguchi	Cells	Wassermann C. S. F.	Wassermann Blood	Ross-Jones
1- 3	Cerebral syphilis	+	..	..	..	..
4-10	General paralysis	+	..	..	..	..
11	Cerebral syphilis	+	+	—	+	+
12	Cerebral syphilis	+	+	..	..	..
13	Tabes dorsalis	+	+	+	+	..
14	Tabes dorsalis	+	+	—	+	..
15 16 17	Same patient, tabes dorsalis	—	..	..	+	..
18-20	Tabes dorsalis	—	—	—	—	—
88	General paralysis (?). Cerebral arteriosclerosis (?)	—	—	—	—	—
21-23	Brain tumor	—	—	—	—	..
24-25	Dementia præcox	—	—	—	—	..
26-27	Cerebral arteriosclerosis	—	—	—	—	..
28	Pernicious anemia with spinal cord involvement	—	—	—	—	..

Table 1 shows our results in this group of cases. It will be seen that in five cases of cerebrospinal lues, and in seven of general paresis, the Noguchi was positive in all. Systematic study of the other reactions was not possible in this series. In two cases of tabes the Noguchi and the cell-count were positive in both, the Wassermann on the blood in both, and on the spinal fluid in one. In one other advanced case (15, 16, 17) of tabes, the Noguchi was negative on three successive occasions, whereas the Ross-Jones test was positive the only time it was tried, and the Wassermann on the blood was twice positive. Cases 18 to 20 were cases of undoubted tabes dorsalis, with typical histories, and at least some of the pathognomonic signs. One was an advanced case and the other two were incipient. In all three cases it is interesting to note the absence of changes in the spinal fluid as well as the negative Wassermann. In Case 88 the history was obscure and the physical findings not definite; the further course of the disease must settle the diagnosis.

In contrast to this series must be placed those cases in which exists the possibility of confusion with the conditions just discussed. In three cases of brain tumor, two of dementia præcox, two of cerebral arteriosclerosis the Noguchi was negative in all, the cell count normal in the four cases in which it was made, and the Wassermann negative on the blood in five. Of especial interest was the patient who presented cord symptoms of pernicious anemia which simulated very strongly those of tabes dorsalis, but whose spinal fluid and Wassermann were entirely negative. Our results in this series are distinctly in accord with those of other workers on the incidence of the butyric acid test in general paresis, cerebral lues, brain tumor and psychoses, but at marked variance in tabes dorsalis. Many more cases are necessary, however, before these few instances can be cited as evidence against Noguchi and Moore's original claim of 100 per cent. positive results.

As far as we are aware, no large series of cases has yet been reported in which advantage is taken of the ease and rapidity of the Noguchi reaction as an aid in the differential diagnosis between acute meningitis and other conditions whose clinical manifestations resemble those due to actual inflammation of the meninges. Apelt[8] has used the Nonne globulin test in differentiating meningitis from meningismus. In children, especially, the state of meningismus is often so pronounced as to puzzle the most able clinician, and not infrequently in the infectious diseases lumbar puncture is the only diagnostic means at our disposal for the solution of the problem. Later we wish to discuss in some detail the special value of the reaction in tuberculous meningitis.

TABLE 2.—ACUTE MENINGITIS AND MENINGISMUS

Case No.	Diagnosis	Noguchi	Cells	Bacteria
		ACUTE MENINGITIS		
29–31	Pneumococcus	+	P. M. N.	Pneumococcus
32–44	Meningococcus	+	"	Meningococcus
45	Streptococcus	+	"	Streptococcus
46	Influenza	+	"	Influenza
		MENINGISMUS		
47	Typhoid	—	—	—
48–52	Pneumonia	—	—	—
90	Pneumonia	—	—	—

In Table 2 can be seen the findings in three cases of pneumococcus meningitis, one of streptococcus and one of influenza meningitis, and in thirteen cases of cerebrospinal fever due to the meningococcus. In all of these, as might be expected from the great exudate of polymorphonuclear leukocytes, the Noguchi test is positive. In the six cases of meningismus occurring in pneumonia, and one in typhoid, the test is negative in all. Of course the clear fluid and the negative bacteriologic findings lead one to expect an absence of globulin, but as the same sort of fluid may be found in tuberculous meningitis, *which in all our cases showed a positive Noguchi, it seems to us to have considerable value in these conditions.*

Until quite recently, when more refined methods for finding the tubercle bacillus were introduced into the examination of spinal fluids, a definite diagnosis of tuberculous meningitis was always beset with more or less difficulty, especially in the early stages. No extended observations have been made on the globulin fraction in these cases. Our results have been constantly positive. Hemenway[9] has tried the test in a few cases with positive results.

TABLE 3.—TUBERCULOUS MENINGITIS

No.	Noguchi	T. B.	Cells
53	+	0	Lymphocytosis
54	+	0	Few lymphocytes
55	+	0	Few lymphocytes
56	+	0	Many lymphocytes
57	+	0	Many lymphocytes
58	+	0	Many lymphocytes
59	+	0	Many lymphocytes
60	+	+	Many lymphocytes
61	+	+	Many lymphocytes
62	+	+	— —
63	+	+	Lymphocytosis
64	+	+	— —
65	+	+	— —
66	+	+	Lymphocytosis
67	+	+	Lymphocytosis
68	+	+	Lymphocytosis
69	+	+	— —
81	+	+	Lymphocytosis

Table 3 shows positive Noguchi reactions in eighteen cases, in the first seven of which the diagnosis was verified by the further clinical course, or by autopsy, and in the last eleven by finding tubercle bacilli in the fluid. It is important to note that our first seven negative bacterial findings occurred when we were using the centrifuge method, while the last eleven positive cases were due to the change to the so-called film method. The technic of this method is so simple and the results so much more satisfactory than any other procedure, that it is advisable to review it in some detail. A tube of the clear or slightly turbid fluid, handled as little as possible, is immediately placed in the ice-chest and allowed to remain there for twelve hours. Most workers put the tube in the incubator, but we have found no difference in results by using the ice-chest, and by its use we are safeguarded from bacterial growth due to accidental contamination—a point which must be considered when fluids come from various sources and are often subject to slightly careless manipulation. At the end of this time a pedicle or a film of varying density generally forms throughout the fluid, and this is floated on to a slide in the same manner as is a piece of tissue. It is important not to mesh up the film; the thinner it spreads and the less tangled it is, the better will be the results. Aftr drying in the air the film is fixed by heat and stained with the usual carbol-fuchsin stain.

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[6] Amsden: Report of Certain Lumbar Punctures at Bloomingdale Hospital, New York, Med. Jour., 1910, xci, 438.

[7] McCampbell and Rowland: Studies on the Clinical Diagnosis of General Paralysis of the Insane, Jour. Med. Research, 1910, xxii, 169.

[8] Apelt: Beiträge zur Frage der Berechtigung der spinalen und cerebralen Punktion, Berl. klin. Wchnschr., 1910, xlvii, 1540.

[9] Hemenway: The Constant Presence of Tubercle Bacilli in the Cerebrospinal Fluid of Tuberculous Meningitis, Am. Jour. Dis. Child., 1911, i, 37.

These eighteen positive globulin tests, added to the few already reported in the literature (Stillman,[10] Apelt,[8] Ross and Jones[5]), render it fairly certain that the reaction is present as a general rule in tuberculous meningitis. In our series it has been more constant than the lymphocytosis, and it certainly is much easier to perform than is a total cell-count and a differential count.

Many fluids have come to us from patients in whom a tentative diagnosis of tuberculous meningitis has been made, but in whom the later course of the disease proved the diagnosis to be incorrect.

TABLE 4.—CASES IN WHICH A TENTATIVE DIAGNOSIS OF TUBERCULOUS MENINGITIS HAD BEEN MADE

No.	Diagnosis	Noguchi	Cells	Remarks
70	Encephalitis	—	..	....
71	Acute purulent adenitis	—	—	....
72	Tetanus	—	—	....
73	Gastro-enteritis	—	—	Death
74	Uremic coma	—	—	....
75	Poliomyelitis	—	—	....
76	?	—	—	Complete recovery
77	?	—	—	Complete recovery
78	?	—	—	Complete recovery

Nine cases of this nature are shown in Table 4; they include various diseases whose manifestations at the stage in which lumbar puncture was performed resembled those of tuberculous meningitis. In all it will be seen that both the cell-count and the globulin test were negative—a sufficiently strong contrast to the findings in tuberculous meningitis to warrant the statement that a negative butyric acid test is presumptive evidence against the presence of tuberculous meningitis. This cannot at present be stated as dogma, as many more examinations will have to be made before the exact truth can be learned. Again it must be emphasized that the reaction cannot, from its very nature, be specific for tuberculous meningitis, any more than it is for general paresis, and to be of any value at all it must be considered only after the most careful correlation with the history and physical findings.

TABLE 5.—MISCELLANEOUS

No.	Diagnosis	Noguchi	Cells	Wassermann
79	Hydrocephalus	—	—	—
80	Hydrocephalus	—	—	....
82	Anterior poliomyelitis	—	..	....
83	Encephalitis	+	—	....
84	Uremia	—	—	....
70	Encephalitis	—	—	....
85	Uremia	—	—	—
86	Myelitis	+	+	—
87	Myelitis	—	—	—
89	Amaurotic family idiocy	+	+	+

As a further elucidation of this point Table 5, presenting the findings in a series of miscellaneous diseases, is of considerable value. In both cases of hydrocephalus the reaction was negative, although increased globulin has been reported present in this condition by Nonne.[11] In both cases of anterior poliomyelitis it was negative; in one case of encephalitis positive, in one negative; in one case of transverse myelitis positive, and in one negative. In three cases of uremic coma it was negative. In the case of amaurotic family idiocy the positive Noguchi and the positive Wassermann are hard to reconcile with the completely negative examination for syphilis at the autopsy. In considering the nature of the diseases in which the reaction seems to vary so much, it may be explained that all the conditions are such as may produce meningeal involvement and consequently a positive butyric acid reaction. On the whole, the main value of this small series lies in emphasizing that even in clinical conditions which may resemble tuberculous meningitis, a positive reaction does not by any means indicate the presence of a tuberculous inflammation, but a negative one presupposes the absence of such a condition.

CONCLUSIONS

This series warrants the following conclusions:

1. Tests for increased globulin in the spinal fluid are easier to perform than is the total cell-count, and have practically the same diagnostic importance.
2. The butyric acid test of Noguchi is convenient and accurate.
3. The use of this reaction gives information of considerable value in diagnosis.
4. The reaction is positive in general paralysis and cerebrospinal syphilis; negative in brain tumor, cerebral arteriosclerosis and psychoses. A positive reaction in a doubtful nervous case is presumptive evidence in favor of the diagnosis being a syphilitic or parasyphilitic disease of the nervous system.
5. In tabes dorsalis, our results are not in agreement with previous reports, the reaction being present in only 33⅓ per cent.
6. The reaction is positive in all cases of acute meningitis and absent in meningeal irritation without actual inflammation.
7. It is always present in tuberculous meningitis, and its presence is an aid in the diagnosis. The absence of the reaction in cases of suspected tuberculous meningitis is of great value in excluding meningitis.

TREATMENT OF INOPERABLE CANCER OF THE CERVIX

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Believing as we do that permanent relief from cancer of the cervix comes through the timely application of the knife, we find little enthusiasm in the management of inoperable cases in which the patients at best can be given but temporary relief. When the disease has gone beyond the reach of the knife we say that it is incurable, but our responsibilities do not end here. Months, and perchance years, of comparative comfort may be added to the life of the unfortunate victim.

One cannot review the literature on the treatment of inoperable cancer of the cervix without being strengthened in one's conviction that much can be done in these pitiable cases. We cannot cure these patients, but we can relieve their suffering, inspire them with hope and give them added days of comfort and usefulness.

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[10] Stillman: A Report on the Value of Noguchi's Reaction on Spinal Fluids, Proc. New York Path. Soc., 1909, new series, ix, 1.

[11] Nonne: Clinical Diagnosis of the Syphilogenous Diseases of the Central Nervous System, The Journal A. M. A., 1909, liii, 289.

Blau reported 408 cases of inoperable cancer of the uterus in the Chrobak clinic. These patients were treated by scraping and the application of the Paquelin cautery; the procedure was repeated at intervals of three to four months. Subsequent reports were obtained from 342 of the 408 patients. One lived eleven years after the above treatment. One was alive and apparently in good health after nine years and another after six years. There was an average of 252 days of life after the initial curettement and cauterization.

In the cases of Conrad, there was an average of 525 days of life from repeated applications of chlorid of zinc and pyoktanin.

Baker reported fifteen patients living from two to twelve years; Byrne ninety patients living from two to seventeen years; Pawlik twenty-nine patients living from two to twenty-one years after repeated local applications. Tomer reports 213 patients treated with the Paquelin cautery free from recurrence after two years, and of this number 149 were apparently healed after five years.

Mose Madden amputated the cervix with the galvanocautery in twenty-two patients; ten were free of recurrence two and one-half years at the time of publication.

The above statistics could be added to indefinitely, but enough have been quoted to convince the most skeptical that cauterization is worth while. While it is true that these statistics antedate the extended operations, and that in many the diagnosis was not verified by microscopic examination, yet the proof of the value of local applications and of cauterization in particular is not wanting.

No signal advance has been made of late years in the treatment of inoperable cases, and the explanation lies, in part, in the difficulties experienced in their management. Few hospitals will harbor these sufferers for the time necessary to pursue extended observations. The patients are usually admitted for a single application of one remedy or another and in a few days are dismissed. The rich will not remain in the hospital, the poor cannot afford to remain, and the hospital management has no desire to retain either. Tomer and Chrobak pass caustic criticism on the attitude of the hospital management toward these patients and recommend isolated wards for their care. In this connection I am pleased to bear witness to the splendid facilities provided in the Skin and Cancer Hospital of St. Louis and to the recent valued contributions to the subject in hand by a member of the surgical staff.

The great number of inoperable patients who present themselves reflect discredit on the diagnostic acumen of the profession, and call for an organized effort looking toward the enlightenment of the laity to the end that women will seek medical advice when the danger-signals become manifest.

The large percentage of recurrences are not chargeable to faulty technic, for it would seem that in the radical abdominal operation for cancer of the cervix we have all but reached our limitations. The explanation lies rather in the failure to recognize the cases while there is yet time to eradicate the disease completely with the knife. Far too frequently are these patients operated on when eradication of the entire cancerous growth is manifestly impossible. "Operated and operable cases may be, and in reality often are, quite different things" says Koblanck. In this connection, I would express the conviction that were we to follow the suggestion of Rosthorn and Franz in the making of an exploratory abdominal incision in recurrent cases, we would find more encouragement in pursuing such cases with repeated attempts to eradicate the disease. When doubt exists as to the extent of recurrence, an exploratory abdominal incision should be made, and in so doing a certain, though not large, percentage of these patients will be found amenable to surgical intervention who might otherwise be treated along palliative lines.

It requires but a hasty survey of the literature to convince one of the futility of all efforts to stay the progress of the disease when once it has passed the confines of the uterus. Were I to recite the long list of remedies proposed in the last two decades, there would be nothing gained and the space allotted me would be consumed. I shall pass them by without consideration, for they have been weighed in the balance and found wanting. The Roentgen ray had proved of positive value in many of the superficial cancerous growths of the body, and the profession was slow to reject its claims as a curative measure for cancer of the cervix, but it has gone the way of its predecessors and to-day we find ourselves almost as helpless as we were generations ago.

The curette and cautery are still in active service, and I for one am not disposed to discard them, for they have proved of positive value in my hands in providing temporary relief from hemorrhage and foul discharges. Though the disease steadily advances to a fatal issue, we are bound to give credit to these measures for added days of comparative comfort. The results of Blau and others clearly demonstrate the value of repeated applications of the curette and cautery at intervals of from three to four months. Unfortunately, we are seldom privileged to follow up our patients so persistently. A single application will afford relief from bloody and fetid discharges for but a brief time, but the recurrence of these discharges will be longer delayed with each application.

Dr. James Spencer Brown of Mont Clair, N. J., is an enthusiastic advocate of the vigorous application of the cautery. He protects the vaginal walls with thin asbestos, holding the sheets in place by retractors. With the soldering iron he deeply cauterizes not only the cervix but the cavity of the uterus as well.

For the past six years I have followed the practice of Dr. Clarence Webster in packing the excochleated and cauterized area with gauze wrung out in a 1 to 4,000 aqueous solution of 40 per cent. liquor formaldehydi. Following such a procedure bloody and odorous discharges may disappear for from two to four months.

The latest remedy proposed for the relief from hemorrhages and fetid discharges is acetone. We are indebted to Dr. George Gellhorn[1] of St. Louis for its introduction and for extended observations in its application. Results obtained by him speak for the efficacy of the remedy, and it is to be hoped that the profession will join with Dr. Gellhorn[1] in giving it an extended trial. I here quote his description of the technic of its application:

> The treatment should, if feasible, be preceded by a thorough excochleation of the ulcerating area. The curetted cavity or crater is then carefully dried with cotton sponges and from ½ to 1 ounce of acetone is poured into the wound through a Ferguson or other tubular speculum. For this purpose, the pelvis of the patient must be raised as in Trendelenburg's position. The narcosis may now be interrupted and the patient be left in this position for from fifteen to thirty minutes. Next, the acetone is permitted to run out through the speculum by lowering the pelvis of the patient and the cavity is packed with a

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[1] The Journal A. M. A., April 27, 1907, p. 1400.

> narrow gauze strip soaked in acetone. The healthy mucosa of the vulva and the vagina are cleansed with sterile water and dried.
>
> After this preliminary curetting and cauterization, the regular treatment, which requires no further hospital care, is administered two or three times a week, beginning the fourth or fifth day after the operation. This is done without narcosis and may be given with the patient in bed or on the ordinary examining chair or table in the office. The pelvis of the patient is raised and the tubular speculum is inserted into the cancerous cavity. With the progressive diminution of the crater, smaller specula are gradually employed. The speculum is filled with acetone and held in place by the patient's hand for half an hour, and is then emptied in the manner described above. Care should be taken to prevent the acetone from running over the vulva or perineum.

In a subsequent article[2] Gellhorn states that he prevents the acetone from running over the vulva and perineum by applying a thick layer of ordinary petrolatum to the vulva and lower third of the vagina; then, after the acetone has run out of the speculum, he swabs the cavity dry and introduces a large cotton tampon coated with petrolatum into the vagina before the speculum is withdrawn. This tampon may be removed by the patient after a few hours.

Gellhorn says that slight oozing of blood is checked almost instantly; that offensive discharges become at first watery, then gradually disappear; that the hemorrhages fail to recur if the treatment is faithfully pursued and that in the course of two or three weeks the walls of the crater become smooth and firm, making a second curettement unnecessary. A diminution in the size of the crater was noted in some cases. With the disappearance of the weakening hemorrhages and discharges, the general strength and nutrition improved. There was no control over the pain due to the cancerous invasion of the nerve trunks.

From the experience of Gellhorn and the few others who have contributed to his observations, I am persuaded that we have in acetone a valuable remedy in the treatment of inoperable cancer of the cervix. It has advantages over the curette, cautery and formaldehyd packs when the patient can be kept under the control of the physician. When the case will not permit of constant supervision, I would give preference to the cautery and formaldehyd solution on the ground that a single application of the latter will have a more lasting effect.

At the recent meeting of the American Gynecological Society in Washington, I took occasion to interview many of the fellows of the society on the subject. There was no manifest enthusiasm in their management of these cases. The great majority were in favor of the curette and cautery and advised the vigorous application of the Paquelin cautery after scraping away all necrotic tissue. Kelly holds the cautery at white heat in the excochleated area for several minutes. In this manner the tissues are deeply affected. Far from criticizing the use of the cautery in these cases, the majority spoke for its more vigorous application.

A variety of remedies were recommended after the application of the curette and cautery, e.g., zinc chlorid (Peterson), equal parts of formaldehyd solution and epinephrin together with the chlorid of zinc (Clark), tincture of iodin locally and Lugol's solution internally (Montgomery).

Only three of the men interviewed had tried the acetone treatment and one of these had abandoned it because of technical difficulties involved in its application (Chipman).

It was my impression that the majority of the men interviewed were of the opinion that the curette and cautery would accomplish all that could be done for these patients. Few had given the acetone treatment the consideration it deserves.

Recently Richter[3] gave an account of the work done in Leopold's clinic with the method of fulguration as proposed by Keating-Hart in 1908. The report is not favorable to the method. I note with interest, however, that the acetone treatment of Gellhorn is endorsed most enthusiastically. One patient has received eighty applications of acetone in the past twenty-one months. The vagina was contracted by bands of scar tissue and would admit the index-finger but 2.5 cm. There was a fistula at the vault of the vagina which discharged a slight bloody purulent secretion. The pelvic connective tissue was widely infiltrated. The patient complained of pelvic pain but her general appearance was good. Richter speaks of the acetone treatment as the most satisfactory method ever employed in Leopold's clinic.

As yet, no remedy has approached the desired object —that of destroying the invading cancer cells. We look to the chemist and biologist for the solution of the problem, believing that a vaccine will be forthcoming that will do more than palliate this dread disease—a vaccine that will prevent the development of cancer, that will forestall recurrence and that will stay the progress in inoperable cases.

Note.—Since writing the above I have had the privilege of visiting the new Skin and Cancer Hospital of St. Louis. In this visit I examined several of Dr. Gellhorn's cases of inoperable cancer of the cervix, and saw him treat two of his patients. His results are unquestionably superior to any that have been obtained by methods previously in vogue. In none of his cases did I observe either odor or hemorrhage.

One case was particularly noteworthy. A growth, which filled the vault of the vagina, was curetted about one year ago. Since then the patient has had twenty applications of acetone. When I saw her there was no odorous discharge, no hemorrhage; the vault of the vagina appeared as a puckered scar with a small fistulous opening leading to the uterus. The patient had gained 20 pounds in weight and suffered little or no pain. Unquestionably, her life has been prolonged and made comfortable to a degree that speaks for the inestimable advantage of the acetone treatment.

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[2] Am. Jour. Obst., May, 1909.

[3] Münch. med. Wchnschr., April 26, 1910.

TREATMENT OF EXOPHTHALMIC GOITER WITH THYROIDECTIN

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Working on the hypothesis that the symptoms of exophthalmic goiter are due to excessive secretion of the thyroid gland, attempts have been made by some to limit the amount of this secretion by extirpating a portion of the gland, by ligating its arteries, and by interstitial injections intended to cause partial atrophy. Approaching the problem from another standpoint, others have endeavored to neutralize the products of glandular hyperactivity by administering milk, blood, or serum of animals whose thyroid glands have been removed, and in which the hypothetical antibodies which normally neutralize the thyroid secretion may be supposed to have accumulated. Still others have employed serums made by injecting into animals normal human thyroid or that of patients suffering from exophthalmic goiter.

Although the wave of enthusiasm which accompanies the introduction of any new remedy seems to have passed, judgment of the value of most of these serums appears to be based on individual reports of one or more cases in which there was improvement during their administration, alone or combined with other treatment, and often with the most important addition of rest in bed. Unfavorable results are always less likely to be recorded than successful cases.

Many writers group the results obtained with various preparations and, giving few data concerning individual cases, draw their conclusions as to "serum-therapy" collectively. Thus, F. S. Bulkeley[1] in a review of the literature of serum treatment of exophthalmic goiter, omitting that relating to the serums of Rogers and Beebe, has collected reports of eighty-six cases. Excluding from these the cases of three patients treated with the blood of a myxedema patient, he records eighty-three cases, with improvement in all but six, and sixteen possible cures judging from data given. This writer groups collectively cases in which Moebius' antithyroidin, serum of rabbits fed with thyroid extract, thyroidectin, serum of a thyroidectomized dog, milk of thyroidectomized goats and a proprietary substance said to be prepared from the milk of thyroidectomized goats were administered; and from these he generalizes as to the effect of "serum-therapy."

Confining our attention to thyroidectin, which is prepared from the blood of thyroidectomized animals, and of which few reports have been published, we find in this list of cases collected by Bulkeley thirty, all of which were pronounced improved, none cured. Since that time A. G. Gullan[2] has recorded five cases, all greatly improved; and H. H. Miller[3] one case in which for eight weeks thyroidectin and iodalbin were administered synchronously, with disappearance of symptoms. The same medication was continued irregularly for three months, and about one year later the symptoms had not returned. These reports include thirty-six cases with improvement in 100 per cent. In contrast, we note the general verdict of A. Kocher,[4] who states that thyroidectin is of inconstant and not of lasting benefit; of E. M. Fisher,[5] who says, "Thyroidectin has proved useless in my hands"; of D'Orsay Hecht,[6] who writes, "Thyroidectin cannot be said to have ever stood approved." Aside from these general condemnations, F. Billings[7] reports the use of from 15 to 40 grains of thyroidectin a day in divided doses in twelve cases with varying results. In none did he secure the favorable results recorded by others. In two cases the symptoms were aggravated by the remedy. This report of Billings is excluded by Bulkeley in his collation of cases up to 1907, which includes thirty cases all improved by the use of thyroidectin, on the ground of scantiness of data and lack of distinct statement of failure or improvement. M. T. Sudler,[8] giving very few data, reports a single case of unilateral goiter with nervousness and rapid pulse treated "medically with the *addition of thyroidectin*," which seemed to improve very slightly and has since remained about the same. S. Gillies[9] has seen improvement in patients taking thyroidectin, but is not sure that suggestion has not much to do with the results.

In the following five cases thyroidectin has been used:

CASE 1.—*History*.—A. T. B., a woman aged 26, single, bookbinder, native of United States, entered New York Hospital (Medical No. 12,120) Feb. 25, 1905. The family history was negative. The patient had had measles, pertussis, scarlatina in childhood; frequent bronchitis; menstruation regular. About 1896 the patient noticed a swelling in central part of neck anteriorly. This slowly increased until 1904; since then there has been no further enlargement. In 1897 the patient noticed that the eyes were becoming prominent, and they continued to do so until 1904. The patient became very nervous; had hysterical manifestations at intervals; has had palpitation of the heart, which was made worse by exertion, as long as she can remember.

Physical Examination.—The patient was fairly well nourished, muscular, with neurotic facies and marked exophthalmos. Von Graefe's sign was present; the patient was unable to approximate the lids completely; there was marked pigmentation of upper lids. There was bilateral enlargement of thyroid; fine systolic thrill over it; loud systolic bruit, loudest over right lobe of thyroid. Cardiac apex-beat in fourth intercostal space, 7.5 cm. to left of median line; sounds clear; systolic murmur at aortic and pulmonic areas, and very faint at apex. The pulse was regular, force fair, tension low. There was slight tremor of hands, especially the right; slight edema of ankles. The lymph-nodes in the groin were enlarged. Temperature, 99 F.; respiration, 20; pulse, 108; red blood-cells, 4,928,000; hemoglobin, 94 per cent. The specific gravity of the urine was 1.014-1.019; acid; no albumin; no sugar; occasional leukocyte. Temperature, February 25 to March 22, 97.6-99.2 F. Pulse, February 25 to March 3, 88-108; March 3 to 17, 88-120; March 17 to 22, 76-118. February 28, weight, 120 pounds.

Treatment and Result.—February 25 to March 1 the patient was given neutral quinin bromid gr. v, three times a day, with no apparent results. March 3 to 17, thyroidectin gr. v, t. i. d. The patient was not confined to bed during her stay in the hospital. March 3 the circumference of neck was 33 cm.; pulse, 80; marked exophthalmos; slight tremor; no marked nervousness. March 4 her weight was 121.5 pounds. March 15 the circumference of the neck was the same; patient felt less nervous; had less palpitation when recumbent; had had headache after 9:30 a. m. every day since beginning thyroidectin; the objective signs were unchanged. March 17 thyroidectin was discontinued; the patient had only one headache subsequently. The only improvement was a gain in weight to 127 pounds. March 28 the patient was transferred to the First Surgical Division and the right lobe and isthmus were removed.

CASE 2.—*History*.—M. B., a married woman aged 38, housewife, native of United States, entered New York Hospital, O. P. D., June 20, 1905. One child died of tuberculosis. The patient was accustomed to take one to two cups of tea, one of coffee, daily. For three years the patient had had a cough, with mucopurulent sputum in the morning, and during that time had lost 60 pounds. For two years the patient had had dyspnea on exertion. Patient was seen in 1904 on account of swelling of front of neck which she had just discovered, though her family had noticed it two or three years previously. At that time she had enlargement of the thyroid, exophthalmos, tremor, and, at left apex, prolonged expiration and subcrepitant râles; temperature, 99.2-99.6 F.; pulse 88-156. For two or three months the patient had had general pruritus, excepting of face; for five or six months pain in the lumbar region; had diarrhea with tenesmus for the previous three weeks; complained also of loss of weight and strength, palpitation and nervousness.

Physical Examination.—The patient was fairly well nourished; had decided exophthalmos. The conjunctivæ were congested and the tongue was slightly coated. There was marked tremor of tongue and fingers. Cardiac apex-beat in fifth intercostal space, 11.5 cm. to left of median line; dulness to third rib, and nearly to median line; faint systolic murmur at second left space; pulse regular, small, moderate tension. There was moderate general enlargement of thyroid, especially right lobe; the circumference of neck over thyroid was 34 cm.;

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1. Bulkeley, F. S.: Boston Med. and Surg. Jour., 1907, clvii, 626.
2. Gullan, A. G.: Lancet, London, 1908, ii, 708.
3. Miller, H. H.: Kansas City Med. Ind.-Lancet, 1908, xxxi, 444.
4. Kocher, A.: München. med. Wchnschr., 1910, lvii, 677.
5. Fisher, E. M.: Jour. Med. Soc. New Jersey, 1909-10, vi, 173.
6. Hecht, D'Orsay: Illinois Med. Jour., 1909, xvi, 248.
7. Billings, F.: THE JOURNAL A. M. A., 1907, xlviii, 349.
8. Sudler, M. T.: Jour. Kansas Med. Soc., 1909, ix, 75.
9. Gillies, S.: Australasian Med. Gaz., 1910, xix, 471.

there were systolic and diastolic murmurs over the thyroid. The temperature was 98.4 F.; pulse, 196. The specific gravity of the urine was 1.015; acid; no albumin; no sugar; one granular cast. The patient's weight was 142¼ pounds.

Treatment and Result.—June 20 the patient was given castor oil and salol, and commenced thyroidectin, gr. v, after food. Six days later, the bowels were normal, palpitation much less; temperature 99.2 F.; pulse 132. Palpitation was less until July 2, when it suddenly recurred. Nervousness was less until same date; exophthalmos diminished; tremor about the same; weight had increased about 2.5 pounds; pulse 168. An ice-bag over the precordia relieved the palpitation. Nervousness diminished until the supply of thyroidectin gave out on July 21; it then increased, as did tremor and exophthalmos, perhaps on account of excitement due to the death of the patient's mother. The pruritus was worse for the previous month; lumbar pains for two or three weeks. July 26, thyroidectin was resumed. August 9, the exophthalmos was less but the nervousness and tremor increased; palpitation occurred frequently; there were thirst, profuse sweating on exertion and headache. The thyroid had enlarged; circumference of neck, 36 cm.; distinct systolic thrill and pulsation and loud double murmur over thyroid. August 21, palpitation was constant and severe; there had been pain in the epigastrium for the previous week, with diarrhea. The pruritus was less; headaches continued; thyroid the same; tremor increased; temperature 98.8 F.; pulse 176. The thyroidectin, which had caused no permanent improvement, was discontinued.

Case 3.—*History.*—L. W., female, aged 47, widow, laundress, native of United States, entered New York Hospital (Medical No. 12,406), April 27, 1905. One sister had enlarged neck but not prominent eyes. The patient had had measles twice; menstruated regularly. She had seven children, and had had no abortions. She was accustomed to drink about six cups of tea and three of coffee daily. About May, 1902, the patient's physician noticed that her neck was swollen; she complained of occasional cardiac palpitation. In May, 1903, she felt very nervous and had some puffiness of the ankles; was in New York Hospital, May 20 to June 27, 1903, with exophthalmic goiter and cardiac dilatation. While in bed both conditions improved markedly, and showed tendency to aggravation when she was allowed up. For one year after this the patient felt well, except for some palpitation and occasional diarrhea; had been growing weaker constantly for previous year; had been unable to work for previous three weeks. She had increasing dyspnea on exertion; she had had a cough during the winter; at time of examination it was less and with no expectoration. She had some frontal and vertical headache; no visual symptoms or edema; no increase of exophthalmos or size of neck; chief complaint, weakness.

Physical Examination.—The patient was fairly nourished, with flabby muscles. There was slight prominence of the eyes; Stellwag's sign was slight; von Graefe's sign absent. The tongue was very slightly tremulous. The thyroid was somewhat enlarged asymmetrically; there was no palpable pulsation, but fine systolic thrill and loud bruit over gland, much more marked on left side. The cardiac apex-beat was in fifth intercostal space, 10 cm. to left of median line; forcible; there was a systolic murmur at aortic area and at apex transmitted toward axilla; pulse full; considerable tension. The lungs were normal, except cog-wheel inspiration at apices posteriorly and slightly exaggerated breathing at left apex. There was marked tremor of the hands. The temperature was 99.6 F.; respiration, 28; pulse, 120; subsequently 80-100. The specific gravity of the urine was 1.016-1.023; acid; faint trace of albumin; no sugar; no casts. April 28, the patient's weight was 118 pounds; she was not confined to bed.

Treatment and Result.—Thyroidectin was given, gr. v, three times a day; emulsion of cod liver oil half an ounce after food. May 19, thyroidectin was discontinued. The pulse was 96-112; rate quite as high as before treatment. The patient's weight had increased to 123 pounds. Improvement was less than with rest in bed during previous stay in hospital.

Case 4.—*History.*—E. P., a married woman aged 45, housewife, native of United States; entered New York Hospital, O. P. D., March 30, 1907. The patient's father had rheumatism. The patient had had no diseases of childhood; she had had frequent "bilious attacks," and for five years, papular eczema every winter; and cough in the morning for years. She was accustomed to drink one cup of tea and one cup of coffee daily. About Dec. 22, 1906, after an unusually hard day's work, the patient became tired and thirsty and could not sleep; she then noticed inability to speak quickly and was easily fatigued. Early in January, 1907, the patient began to have dyspnea on exertion, palpitation after meals, bad taste, swelling of ankles. Toward the end of that month the patient noticed slight swelling of front of neck, varying slightly in size. Her weight was 135 pounds six months prior to admission; she became thin in January; was always puffy under the eyes, worse for the previous month. She vomited three times three days prior to admission.

Physical Examination.—The patient was rather poorly nourished. The eyes were slightly prominent, with puffiness of lower lids. There was slight general enlargement of thyroid, especially right lobe and isthmus; circumference of neck, 31.5 cm. The cardiac apex-beat was in sixth intercostal space, 12.5 cm. to left of median line; forcible; there was dulness to the second rib and to the left border of the sternum; systolic murmurs at second right and left intercostal spaces; the pulse was of fair size, moderate tension. Above the right clavicle and in first intercostal space were dulness, bronchial breathing, whispered pectoriloquy; above spine of right scapula, same. There was liver dulness from the fourth intercostal space to 4 cm. below costal margin in right parasternal line. There was very slight tremor of the fingers. The temperature was 99.2 F.; pulse 104. The patient's weight was 109.5 pounds.

Treatment and Result.—Rhubarb and soda with nux vomica were given before meals; thyroidectin gr. v, after food. April 6, there were no gastric symptoms; no dyspnea on exertion. The specific gravity of the urine was 1.026; acid; no albumin; microscopically negative. April 11, there was slight increase of exophthalmos and tremor, both of which had diminished one week later, while the weight had reached 115. By May 7, the patient had been taking thyroidectin irregularly for the previous week. She then had a choking feeling when hurrying; venous hum over jugular veins; aortic second sound accentuated; systolic murmur over precordia, maximum intensity in second right intercostal space; pulse occasionally irregular in frequency; hemoglobin, 64 per cent. (von Fleischl). She was now given iron, arsenic and strychnin in addition to thyroidectin. May 15, there had been palpitation for two days, which at times seemed slightly diminished by thyroidectin. The weight was 110.5 pounds. Along the left border of the sternum there was a scraping systolic murmur, maximum intensity in the third and fourth intercostal spaces, close to the ear, sometimes increased by bending forward; at other times when straight, after bending forward; there was a systolic murmur at the second right intercostal space. Thyroidectin was given, gr. x, after food for three days, then gr. v, after food. May 27, palpitation was worse while taking thyroidectin gr. x, after food; it was relieved by sodium bromid gr. x, taken as needed; recurred after taking thyroidectin gr. v, after food, again. June 4, there was increased tremor; the heart was overacting; the pericardial friction sound was still audible. The patient was given tincture of belladonna, Blaud's pills. June 17, the patient's weight was 108.5 pounds; hemoglobin 80 per cent.; circumference of neck same as on admission; little palpitation or dyspnea. July 17, the patient's weight was 105; temperature 98.7 F.; pulse, 84; there was increased exophthalmos; perhaps increased tremor; little palpitation. The patient was given thyroid extract gr. v, twice a day after July 24. Severe palpitation began on July 28, with edema of face and feet; the patient felt weak on rising. July 31, the patient's weight was 112.5; temperature 98.8 F.; pulse, 108, and very irregular in frequency; there was increased tremor. The patient was given thyroidectin gr. v, after food. After four doses she was much worse; palpitation, weakness and nervousness were present, and edema of legs more marked. The patient's weight was 116.5; temperature, 99.4 F.; pulse, 108, of slightly increased tension. There was increased exophthalmos. Thyroidectin was discontinued. The patient was treated subsequently with sodium bromid, belladonna, strophanthus, tonics and ice-cap over the heart. The patient's weight rose to 123 pounds. Symptoms of exophthalmic goiter varied as before. The heart showed signs of dilatation and hypertrophy, with marked irregularity in force and frequency of pulse; the urine was of low specific gravity; edema of whole of lower extremities was present, also gastric disturbance. July 1, 1909, the thyroid was smaller; there were no symptoms of exophthalmic goiter except slight exophthalmos; the symptoms were chiefly edema and diminished urine, of specific gravity not above 1.016; no albumin.

Case 5.—*History.*—The patient, M. W., a widow aged 36, domestic, native of Ireland, was seen May 15, 1908. Her father died of tuberculosis. The patient had had measles, variola, scarlatina and pertussis. She married in 1900; one year later had still-birth at term; then three abortions at two to three months; finally labor at eight months, three and a half years before the time of examination; the child was living. Menstruation had been irregular before the patient's marriage; after labor no menstruation for two years. Hemorrhage preceded all abortions and labor, and dyspnea and edema of legs were present in all pregnancies. The patient had had cough since marriage; sputum white; at times blood-streaked; for the previous four years cough only in winter. She was accustomed to take five cups of tea daily. At 12 years of age the patient had several frights; began to have choking feeling, then marked tremor; palpitation when excited; did not notice goiter until she was 15, though friends had observed thickness of neck for one or two years. At that time the patient had dyspnea, increasing weakness, and prominence of eyes. The symptoms were worst at the age of 17; six months later she was obliged to stop work, and was in hospital twice for three months. The patient was treated ten or twelve years with belladonna, digitalis, ergotin, quinin, iron, arsenic and bromids; improved at 24; was able to work later, but nervousness and tremor continued; she had been losing weight for years. From 12 to 26 years the patient had frequent stools soon after meals; no other symptoms. Beginning work in new place May 12, the patient became very nervous and had had repeated attacks of tachycardia, so severe as temporarily to prevent working.

Physical Examination.—The patient was poorly nourished and very nervous, with flushed face and slight bilateral exophthalmos. She had a marked tremor, especially of hands, so severe that she could not handle fluids without spilling them. There was general, soft, uniform enlargement of the thyroid, with overlying veins distended; the circumference of neck was 38 cm. The cardiac apex-beat was heaving, in the fifth intercostal space 9 cm. to the left of the median line; there was dulness to the third rib and to the median line; systolic murmur at apex transmitted slightly to left; from the second rib upward to and over the thyroid, there was blowing systolic murmur; loud venous hum over vessels of neck, especially during systole.

Treatment and Result.—Thyroidectin, gr. v, was given after food. May 17, the patient was less nervous; pulse, 96 to 100, regular; hemoglobin, 68 per cent. The patient was given ovoferrin after food. May 22, she had had epistaxis for one week at intervals; there was less tremor and nervousness; pulse, 96; circumference of neck, 37 cm. Thyroidectin was given, gr. x, after food, for four days, and patient thought improvement continued, but she was more nervous; pulse was 96 to 108; weight 91¾ pounds. Thyroidectin was discontinued; sodium bromid was given, gr. x, before food, and soon afterward, iron. July 12, the patient's weight was 99¾; hemoglobin 103 per cent.; there were no severe nervous attacks with tachycardia; otherwise the patient's condition was the same. After resting for two months patient returned to work, weighing 107 pounds, and attacks recurred. The left lobe of the thyroid, partially intrathoracic, was removed; four months later, the patient's weight was 115. The exophthalmos, nervousness and tremor gradually subsided. Jan. 17, 1910, there was still some nervousness, tremor and slight tachycardia when the patient was excited, but much less than before operation.

On account of the uniformly unfavorable results, thyroidectin was used in no further cases.

Before the introduction of thyroidectin, I had employed desiccated milk of the thyroidectomized cow and goat, each in one case. The histories are as follows:

Case 6.—*History.*—A. A., a married woman aged 38, housewife, native of United States; entered Vanderbilt clinic Feb. 4, 1905. The family and previous history were negative in their bearing on present illness. Menstruation was normal. The patient was accustomed to take two cups of coffee and four of tea daily. In February, 1903, the patient noticed a swelling in the right side of the neck anteriorly; two or three months later she began to have constant palpitation, loss of weight, nervousness and enlargement of the remainder of thyroid; swelling increased gradually but steadily. The patient did not menstruate in July, August and September, 1903, but was regular following that time. The patient improved at intervals under treatment, but was not kept in bed at any time. After any excitement the patient had diurnal headaches, chiefly frontal and vertical. The patient had not noticed prominence of the eye-balls until told of it by her physician in May, 1903. Protrusion diminished slightly after that time. Dyspnea had occurred on exertion for the past year. There were slight dry cough and hoarseness since December, 1904. Chief complaints: nervousness, palpitation, headaches.

Physical Examination.—The patient's face was flushed. There was slight exophthalmos; von Graefe's sign was present; quivering eyelids. The whole thyroid, especially the right lobe, was enlarged; the circumference of the neck was 38 cm. There was a double murmur over the thyroid, especially at the sides; a constant bruit and thrill over jugular veins; loud systolic murmur over carotid and subclavian arteries. The cardiac apex-beat was in the fifth intercostal space 10 cm. to left of median line, heaving; there was an area of dulness to the third rib and to the left border of the sternum; and a systolic murmur over whole precordia; first sound reduplicated at the apex. There was marked tremor of the hands; varicose veins and slight edema of legs. The temperature was 98.4 F.; respiration, 28; pulse, 132. The patient's weight was 142.5 pounds. The specific gravity of the urine was 1.011; acid; no albumin.

Treatment and Result.—February 4 the patient was given tincture of digitalis and a mixture containing bromids with nux vomica. During the ensuing week the patient felt much better in every way; pulse fell to 108; weight increased two pounds. Four days later the patient reported severe palpitation and no decrease of nervousness; temperature 98.8 F.; pulse 108. She was given desiccated milk of thyroidectomized cow, gr. v, three times a day. March 2, temperature 99.2 F.; pulse 132. March 6, the patient reported constant palpitation and weakness; she said that the goiter seemed swollen every night; temperature 98 F.; pulse, 184. There was no change in nervousness, tremor or exophthalmos; circumference of the neck was 39 cm. A letter from her husband, dated March 23, forcibly reported apparent results of treatment. "My wife since she commence to take those capsules her heart was about to jump out of her body and I put a stop to her taking them. She will not call again upon you."

Case 7.—*History.*—H. E., a married woman aged 42, housewife, Hungarian, entered Vanderbilt Clinic, March 11, 1905. The family and previous history were negative. The patient had one healthy child born twelve years previous to admission. A few weeks later the patient noticed a slight swelling in front of neck, which increased rapidly for one year; not subsequently. The patient was married a second time three years previous to admission; and after that had much domestic trouble and became very nervous. One and a half years prior to admission the patient began to have swelling of the right lobe of the thyroid, which increased gradually and was occasionally painful, especially at night. For the previous six or eight weeks, there had been rapid and exaggerated heart action; no exophthalmos or tremor. The patient would eat only at supper time on account of excitement, and drank six to eight cups of coffee daily.

Physical Examination.—There was no exophthalmos; cyst about 1¼ inches in diameter in isthmus of thyroid; right lobe similarly enlarged; no bruit over gland; circumference of the neck over the large cyst 38.5 cm. The cardiac apex-beat was in the fifth intercostal space, 11 cm. to left of median line; there was dulness to the third rib and to 0.5 cm. to left of left border of sternum; a faint systolic murmur at second right intercostal space. The pulse was regular. There was slight tremor of the hands. The temperature was 100 F.; respiration, 28; pulse, 96. Urine: specific gravity 1.018; acid; no albumin; microscopically negative.

Treatment and Results.—The patient was given extract of belladonna gr. ¼, every four hours, and a mixture containing bromids and nux vomica. The temperature was 98.8-99.6 F.; pulse, 92-120. April 1, there was no pain in the neck; otherwise the symptoms were the same; the circumference of the neck was 36.5 cm. April 4 there was increased palpitation and nervousness; the patient was given desiccated milk of thyroidectomized goats, gr. v, three times a day until May 18. Temperature was still 99-99.6 F.; pulse 96-112. April 20, there were less nervousness and palpitation. May 2, the patient felt much better; the cyst was less tense, but the circumference of the neck was unchanged. One week later the patient was still having palpitation but no nervousness, and had complained of pain in left side of the thyroid for two weeks. May 18, pulse 84. Desiccated milk was discontinued. May 23, there was no nervousness; less palpitation.

Summarizing the apparent results of treatment with thyroidectin without absolute rest in bed—apparent, because of the well-known variability of symptoms in exophthalmic goiter and the powerful effect on the nervous symptoms of suggestion of the potency of a new remedy—we find:

In Case 1, with treatment for two weeks with thyroidectin gr. v, three times a day, the nervousness diminished and tachycardia was less when the patient was recumbent; but there was no actual improvement save gain in weight. Headaches were present daily while the patient was taking thyroidectin; they ceased immediately when it was discontinued, except one day.

In Case 2, with the same dosage for nine weeks, with the exception of five days, the patient showed diminution of palpitation and nervousness at first. Subsequently all symptoms increased.

In Case 3, with the same dose for three weeks, there was slight general improvement, less than with rest in bed during the previous stay in the hospital; and no greater than change of habits and partial rest would account for.

In Case 4, the patient, treated fifty-seven days with gr. v, after food, and three days with gr. x, after food, showed very slight initial improvement, apparently a coincidence, or due to suggestion. The symptoms later became more marked under treatment; at times apparently exaggerated by thyroidectin, especially by dose of gr. x, after food.

In Case 5, treated seven days with gr. v, after food, and four days with gr. x, after food, the patient showed less nervousness and tremor during treatment. The symptoms were always greatly aggravated by any excitement. The patient was under great nervous strain when first seen. There was no real permanent improvement.

The patients had had symptoms for nine years, three years, three years, three months, and twenty-four years respectively, before thyroidectin was given. All the cases were of moderate or marked severity, except Case 3. Two showed severe cardiac lesions. Thyroidectin was given for from eleven to sixty-one days; dosage, gr. v to x, after food. Temporary improvement of symptoms was chiefly in tachycardia and tremor.

While none of these patients showed any real improvement excepting what would be amply accounted for by rest and regularity of habits, Patients 3, 4, and 5, if seen only during the early part of the treatment, might have been reported as improved. Their subsequent course suggests great caution in interpreting the reported 100 per cent. of improved cases.

The two patients treated with desiccated milk of thyroidectomized animals showed, in one instance, very marked aggravation of symptoms, especially tachycardia and weakness; in the other, nervousness disappeared, palpitation diminished, and the pulse-rate, previously 92-120, fell to 84-90. This case might have been considered improved, but regulation of excessive coffee drinking might largely account for this change.

My impression is that whatever improvement was noticed in any of these cases was due to rest, regulation of habits, and suggestion, or was a coincidence. The aggravation of symptoms may also have been a coincidence, but when it occurred it followed very closely the periods of administration of the drug.

SUMMARY

The few recorded results with thyroidectin in exophthalmic goiter are, on the one hand, improvement in 100 per cent. of thirty-six cases reported by three writers; on the other, one unfavorable report on twelve cases, one of negative results in a single case, and general condemnation, without details, by three observers. To these I add five cases, none of which gave results which were greater than the ordinary variation in symptoms in exophthalmic goiter under the influence of rest, suggestion, and regulation of habits, while in one case the remedy appeared to aggravate the symptoms. My two patients treated with desiccated milk of thyroidectomized animals showed extreme aggravation of symptoms in one case, apparently a direct result of the treatment, and in the other improvement, probably due to restriction of coffee. The results of treatment with thyroidectin seem far inferior to those secured by rest, symptomatic medical treatment, or partial thyroidectomy.

201 West Fifty-Fifth Street.

SUCCESSFUL REMOVAL OF BRAIN TUMORS

A CEREBELLAR TUMOR AND AN ENDOTHELIOMA OF THE PREFRONTAL DURA MATER

LEO NEWMARK, M.D.
WITH
H. B. A. Kugeler, M.D., and Harry M. Sherman, M.D.
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The fortunate outcome in these cases of cerebellar tumor and endothelioma of the dura is offset by an unhappy termination of our endeavors in a considerable number of instances of intracranial growths. There have been records enough of others' failures, however, to console us, and enough of successes to encourage us to persevere. The following account may render at least the latter service to those who need it.

Case 1 (By L. Newmark and H. B. A. Kugeler).—*Abstract.* Headache and vomiting began in November, 1908. In March, 1909, impairment of vision. In September, 1909, *exploratory* punctures and aspiration of (normal) substance from *both* cerebellar hemispheres. Escape of cerebrospinal fluid from puncture on the *right*. Subsidence of papillitis, and apparent good health for ten months. Then return of suffering; anesthesia in *right* trigeminal area. In November, 1910, *removal* of tumor from *left* cerebellar hemisphere.

Symptoms.—The patient was a girl 20 years old at the time of this report. In June, 1906, she is said to have vomited on three occasions, each time after supper, but without apparent cause. For six months thereafter the menses were suppressed. Otherwise she was quite well until November, 1908, when she began to have headaches and occasional vomiting on rising in the morning. At first the vomiting would occur about once a month, without relation to menstruation; after three or four months the intervals became shorter, until in the spring of 1909 they were reduced to two or three days. In March, 1909, her sight began to fail; she would be unable to read what she had produced on the typewriter. She held her head stiffly and inclined to the right, raising the right shoulder at the same time. We saw her together first on August 3, 1909, a few days after she had vomited so violently as to cause a severe gastric hemorrhage. The patient was cheerful and chatted volubly, and ordinarily did not give the impression of suffering. She said, however, that she always had more or less headache, "all over," but chiefly in the back of the head. We found papillitis in both eyes. Vision was considerably reduced in the right eye, but was quite good in the left. The eyeballs were both rather prominent. There was no nystagmus; nor was there any strabismus, although the patient mentioned frequently that she saw double, and once the diplopia continued all day. Dr. Adolph Rosenthal of the German Hospital, who examined her with us at the hospital, considered the diplopia to be due to incoordination of the ocular muscles. Inquiry elicited the statement that there was sometimes a numbness of the right half of the upper lip, but at this period we could not convince ourselves of any alteration of sensibility there (or anywhere else). The function of all the other cranial nerves was intact. When walking the patient now and then lurched very slightly to the left. During August, she would raise the right shoulder and incline the head slightly toward it on one day, and on another she might approximate the head and left shoulder. There was no incoordination of any kind in the upper or lower extremities. The tendon reflexes were all feeble at best; often the heel reflexes could not be elicited at all by any method; the knee-jerks were variable and required reinforcement, which would sometimes evoke both, and at other times only the left. The plantar reflexes were normal, the abdominal reflexes were absent on both sides. The pulse and the temperature were normal. The skull was not especially tender to pressure at any point, but the bone was perceived to be very thin and soft in the temporal regions, much more in the right than the left. X-ray plates seemed to confirm this impression; moreover, the sella turcica showed very faintly on them.

Deductions.—The papillitis, headache and vomiting were sufficient to prove the increase of intracranial pressure. The cause of this might be a tumor with or without hydrocephalus, or chronic hydrocephalus without a tumor. Lues was eliminated as far as possible. If a tumor was present the cerebellum seemed not unlikely to harbor it, for the manner of holding the head and the lurching, slight though it was, suggested that location, if they did not prove it. The fact that the headache was chiefly occipital seemed in some measure corroborative of this view. The absence of a disturbance of hearing excluded the cerebello-pontile angle from consideration; and the absence of nystagmus lessened the strength of our conviction that the tumor might be in the occipital fossa. On the one hand, there was a similarity to the symptoms of cerebellar disease; on the other, the absence of such frequent concomitants of cerebellar tumors as nystagmus and strabismus seemed to constitute a difference. This similarity with a difference induced us to regard a chronic hydrocephalus without tumor as not altogether improbable. The numbness of the right half of the upper lip, which the patient had mentioned only in response to an inquiry, could not weigh much in our balancing of the symptoms, because it was not present at this time.

Diagnosis.—As it was thought inadvisable to disregard the region where the atrophy of the bone was so conspicuous, a small incision was made, August 19, 1909, in front of the right ear. The bone was found to be as thin as paper. A slight slit was inadvertently made in the dura. Some of the subjacent brain substance was aspirated and examined under the microscope, and proved to be normal. A few days later 25 c.c. of cerebrospinal fluid were obtained from the right lateral ventricle through the same opening. It was reported to contain 0.2 per cent. of albumin and an excess of mononuclear leukocytes. We could not establish on this occasion that the ventricle was greatly dilated. On September 1 an incision was made on either side, midway between the external occipital protuberance and the apex of the mastoid process, and the bone opened with a small trephine. On the left side the same thinning of the occipital bone was found as in the right temporal region. On the right side the bone appeared normal. Substance was aspirated through each opening and submitted to Professor Ophüls, of Stanford University, who reported that "sections from both sides show cerebellum, no tumor." On the right side a hemorrhage occurred, so that the wound had to be packed with gauze. When two days later the gauze was loosened, there occurred a profuse flow of cerebrospinal fluid. The fluid continued to escape for ten days. The headaches, the vomiting and the pain in the eyeballs ceased and the patient was allowed to return to her home. When examined there a few weeks later the papillitis had disappeared, leaving the disks pale; the vision was 6/8 in the left eye and 6/10 in the right eye, as determined by Dr. Rosenthal. The patient took part in the work of the household and, although reported to be a trifle unsteady, with a little tendency to stagger now and then to the right, she was considered well until the end of July, 1910.

This subsidence of the symptoms after the discharge of cerebrospinal fluid had made us incline rather to the diagnosis of a chronic hydrocephalus without tumor. But the vomiting reappearing, occasionally at first with headaches, the patient was forced in August, 1910, to take to her bed again. She had to lie perfectly flat, as a pillow under her head would cause pain in the neck, occiput and eyes. At times there was tense bulging at the site of exploration in the right temporal and left occipital regions and well-marked fluctuation between the two on percussing the occipital area. September 23, 50 c.c. of cerebrospinal fluid were withdrawn from the right lateral ventricle through the temporal opening; vomiting and pain in the eyes immediately ensued and for three days there was a rise in temperature, the highest being 101 F. Occasionally some alleviation punctuated the patient's sufferings from vomiting and pain, so that she could be up and perform household duties. October 6 she was unconscious for fifteen minutes. November 23 we resumed our cooperation, one of us not having been able to see the patient for several months. The appearance of the disks, and the vision, had not changed during the year. Knee-jerks, ankle-jerks, and plantar reflexes were now all found to be perfectly normal. There was still neither nystagmus nor strabismus. The various tests for eliciting signs of disturbance of cerebellar coordination gave negative results. There was now a distinct diminution of tactile sensibility in the right half of the upper lip. This was said to vary: the patient said it was so marked at times that when she touched the right side of the upper lip with her finger and could not feel the lip she seemed to have lost her finger. This hypesthesia in the lip was most pronounced when the pain in the back of the head was most severe. The motor trigeminus was not affected. Deglutition was becoming difficult; the patient sometimes choked over her food. The pulse-rate was 120. There was no bulging through the opening in the skull at this examination. From November 25 to November 27 the patient could not swallow at all; a few drops of water were allowed to fall into her mouth from time to time. She was removed to the hospital, November 27 in the evening. The rate of the pulse was now between 130 and 140 and its beat was barely perceptible.

Further delay was evidently dangerous. It was therefore determined to examine the sites of the cerebellar punctures, one of which, by permitting the discharge of cerebrospinal fluid, had been so beneficial. It was hoped that this benefit might again be obtained by a repetition of the procedure and that the pressure on the medulla oblongata might be thereby relieved, thus permitting the patient to recover sufficiently to give an opportunity for a more extensive exploration of the cerebellum under less desperate conditions. The anesthesia in the distribution of the right trigeminus, as well as the consequence of the former intervention on that side, invited to operation on that side first.

Operation.—Accordingly, a few hours after the patient entered the hospital an incision was made through the scar. The dura was very tense. Puncture of the cerebellum produced, after two fruitless attempts, rather more than an ounce of a clear, amber-colored fluid, the first portion of which, spurting under considerable pressure, was lost. The intradural pressure was plainly lessened by the evacuation of this fluid. Further punctures yielding no more, an incision was made following the scar over the left cerebellar hemisphere, and there was disclosed a purplish mass protruding through a small opening in the dura. It was very soft and vascular, but after some effort a firm hold was secured and it was extracted entire through the enlarged opening in the dura and the bone. After its removal normal cerebellum was in sight; it soon pulsated freely. The patient was pulseless when returned to bed, but before long she recovered and in a few hours was able to swallow with ease. Nothing occurred to interfere with her restoration to health. The anesthesia in the right trigeminal area has disappeared. The patient is now (February, 1911) attending to her domestic duties, besides being active in her father's business.

The tumor measured approximately 5.5 by 2.5 by 2 cm. Professor Ophüls reported that it was a glioma of the cerebellum. The fluid which was obtained from the right cerebellar hemisphere contained but little sediment, which consisted or red blood-corpuscles, some granular and a little crystalline blood-pigment.

The salient points in this case are as follows:

1. The therapeutic effect of puncture of the cerebellar hemisphere opposite to that which contained the tumor.
2. The failure of puncture and aspiration at the site of the tumor to reveal its presence.
3. The non-recurrence of papillitis when the other symptoms returned.
4. The atrophy of the skull, probably the effect of pressure.
5. The anesthesia in the face, which might well delude one as to the side of the tumor. Ziehen mentioned in a discussion[1] as very remarkable "a *crossed trigeminus* paralysis" in a case in which he had diagnosed a cerebellopontile tumor, which, however, was not found at the operation, and Oppenheim stated in the same discussion that he also had once seen a contralateral trigeminal paralysis.

Case 2 (By L. Newmark; operation by Harry M. Sherman). —*Abstract.*—Intermittent headaches since 1906. Choked disks observed in November, 1907. Bilateral anosmia, pain in occiput and back of neck in March, 1908. In April, 1908, osteosarcoma on inner surface of trephine button removed from left prefrontal region. Permanent disappearance of headache and choked disks. December, 1910, removal of endothelioma of dura mater from same region.

It would seem in a sense to be an *extreme mischance* in localizing an intracranial tumor to discover it at last in the prefrontal region when it had been sought in the cerebellum. Yet such an error is not very uncommon, and in the course of the following notes it will appear how insistently at least subjective symptoms may direct one's attention to the back of the skull when the growth is situated in front. The tumor in our case was an endothelioma of the dura mater. Such a tumor is often a favorable object for surgery when it can be localized; but the diagnosis may be very difficult. Four cases observed by Nonne,[2] of Hamburg, illustrate this relation; in none of them was the tumor diagnosed, and in all it might have been removed with ease.

Symptoms.—The patient, a ruddy, robust Danish woman, aged 38, came under my observation at St. Mary's Hospital at the invitation of Dr. C. C. Mohun, March 23, 1908. Since "four weeks after the fire," that is, about May, 1906, she had been subject to paroxysms of headache, in the intervals between which she appeared to be well. The pain was formerly chiefly on the top, but of late commonly in the back of the head. Until the last attack of headache (which brought her to the hospital) the head would be drawn backward in the paroxysms and sometimes held retracted until the skin at the throat became sore from the stretching. The patient had had as many as three distinct attacks of headache in a single night, in which she would get on her knees and hold on to the upper part of the folding-bed, with her head drawn back. The head had remained thus retracted for a whole day at a time. In the attack, during which she entered St. Mary's, however, the head was inclined forward, so that the chin approached the chest, and in that position I found her, evidently in great pain, which, she said, she felt in the back of the head and neck, the back of the head being particularly painful on the left. The headaches often began with a "beating" in or behind the left ear. The patient had lost consciousness four or five times, not always, according to her husband, in a headache. There had been no convulsions. Ordinarily she did not vomit in the headaches, but during the last one she did, and, according to a witness, after the vomiting, a clear fluid "like water" came out of the nose drop by drop. Pain was felt often in the left eye, but not in the right. At times she would become blind for a moment. A few months before admission she could not see well after dark, so that after nightfall her husband had to lead her, but of late there had been an improvement in this respect. In November, 1907, Dr. James Franklin Smith had first observed choked disks.

Examination.—This disclosed bilateral anosmia. It was then elicited that the patient had observed the loss of the sense of smell several months before. Dr. Smith found no sign of a discharge of cerebrospinal fluid through the nose, such as the statement in the history suggested. The disks were both choked, the left a little more than the right. All the other cranial nerves were intact; all the reflexes and motor and sensory functions in the trunk and the extremities were normal. *A tremor in the upper and lower extremities was noticeable.* There was no exophthalmos, no strabismus, no real nystagmus, no cerebellar incoordination or staggering, no form of aphasia, nothing abnormal in the pulse or the temperature. Briefly, of the cranial nerves, only the first and second pairs supplied a clew; the functionally differentiated parts of the brain supplied none. The last assertion should perhaps be qualified; for the patient's husband declared that her character was changing. There was a sort of affected hilarity about her. I was furthermore struck by her indifference when I explained to her that an operation might be required to preserve her sight. The alleged change in her disposition and her inability to appreciate the gravity of her condition were taken into consideration later on weighing the arguments in favor of localizing the disease in the frontal lobe. Meanwhile, however, it was to the occiput that the patient's complaints drew our attention. By degrees, the severity of the paroxysm abating, the patient recovered from the prostrating headache with which she had entered the hospital, but still was cautious in moving her head until March 26. Then, although suffering no great discomfort in the daytime, she continued to have pain at night in the back of the head and neck, chiefly in the left half of the occiput. The pain was felt sometimes as far down as the upper dorsal region. The patient said that she could not lie on the left side on account of the tenderness in the back of the head on that side. The "beating" deep in the ear or behind it added to her distress; it was "like a clock." Tenderness to pressure was constant in the occiput on both sides, although it varied in degree on different days, and it was always greater on the left side than the right. Nowhere else in the skull was this tenderness found. The left frontal region was examined in this respect frequently and with special care. April 5, 1908, with the assistance of Dr. John Van Denburgh, the whole skull was percussed and auscultated, but no additional information was obtained. On the day before, the patient mentioned that she had had "little jerking movements of the head backward," and that she had felt them in the back of the head on the left side. April 5 I witnessed these movements, which were evidently due to short sharp clonic contractions of the muscles that retract the head. April 11 she vomited frequently, and it was

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1. Neurol. Centralbl., 1907, p. 537.
2. Deutsch. Ztschr. f. Nervenheilk., xxxiii.

on April 13 that she felt the pain as far down as the upper dorsal region. She requested an operation, and April 15, when a hemorrhage appeared in the left disk, a sufficiently urgent reason was supplied to grant the request.

Diagnosis.—But where was the skull to be opened? The fundamental problem was the interpretation of the anosmia. This does not appear from the history to have been an early symptom, and it might have been caused by hydrocephalus, which in its turn might have been caused by a growth in the occipital fossa. Thus the combination of anosmia with tenderness and pain in the back of head and neck, and with spasms of the muscles that retract the head, would have been explained. The alternative was a direct pressure on the olfactory bulbs or nerves by a prefrontal tumor; but a single prefrontal tumor, unless it crossed the median line, would be expected to cause unilateral rather than total anosmia. There are abundant cases on record to show how fallacious tenderness of the occiput may be as a guide to diagnosis; yet the pain there, and the "beating" in the ear and the backward jerking of the head, were hard to disregard as indicative of the occipital position of the tumor. At length, however, the reflection that there was no impairment of the function of any organ lying within the occipital fossa determined the question in favor of the prefrontal region, in which judgment I was further confirmed by the reputed change in the woman's character. The subjective symptoms were allowed an influence on the decision as to which side of the skull concealed the tumor. The patient had finally called the left "the sick side:" the left disk was slightly more swollen than the right; so the left prefrontal region was chosen for the first exploration, despite the absence of aphasia in this right-handed person.

First Operation.—Accordingly, on April 16, 1908, Dr. T. E. Bailey trephined at a point about 4 cm. above the middle of the left supra-orbital ridge. The purpose was to probe the brain through the dura, and, if necessary, to aspirate particles of brain tissue for microscopic examination. From this point, furthermore, it would be feasible to tap the anterior horn of the lateral ventricle and to determine whether or not it was dilated. A puncture toward the base and median line was unproductive; a second, directed toward the occiput, encountered resistance at a distance of about 1⅛ inches; the instrument had entered something which seemed to be of the consistency of wood and a little force was required to disengage it. A week later a trephine was applied over the resistant substance, and when the disk was removed it was found that what the exploring instrument had encountered was a prominence on the inner surface of the bone, apparently an osteophyte, which had forced the subjacent dura rather deeply inward. The dura thus exposed was thickened. The opening in the skull was enlarged until normal dura was seen in all directions. The dura itself was not opened, as the removal of the projecting bone seemed sufficient to relieve the pressure on the brain. Dr. E. A. Victors was kind enough to prepare microscopic sections of the skull disk, and Professor Ophüls favored me later with the following report on the specimen:

Pathologic Report.—"Trephine button 22 mm. in diameter. Outer surface smooth, normal. On inner surface rough bony prominence forming a flat cone of 19 mm. base, projecting in the middle about 6 mm. On the rough surface there are small remnants of adhesions to the dura. The tumor evidently arises from the internal table and extends into the diploe for 3 to 4 mm. in an irregular fashion. The dividing line between tumor and diploe is rather indefinite. Section shows thick masses of lamellated, dense bone tissue with normal bone-cells. In the bony tissue there are large open spaces which, above toward the diploe, are filled with cellular bone-marrow, below in the tumor proper with a cellular tissue made up of large spindle-shaped cells with large vesicular nuclei and little intercellular tissue between them. Osteosarcoma of the skull."

Postoperative History.—A few days after the operation, having doubts as to the sufficiency of what had been done, I intimated to the patient that a second operation might be necessary, to which she replied that she felt very well and would assent to no such proposal. Indeed, she has never again suffered from the headaches and has no complaint about her eyesight. When she left the hospital just one month after the operation the swelling of the disks had become less by 3 diopters, and the beating in the left ear and the tenderness of the occiput had disappeared. Only the anosmia remained. In a few weeks more the swelling of the disks had completely disappeared; they were pale, but the patient was conscious of no defect in her vision. Through the opening in the skull, covered by the skin, a mass now protruded. The woman was very distrustful of her medical attendants, asserting that they wanted to experiment on her, and would not permit an examination of the protuberance on her forehead. No one could prevail on her to present herself again for inspection. The insensibility to the benefit she had received, and her perverseness toward those who offered to continue their efforts in her behalf, were declared by her husband to be foreign to her character. From the summer of 1908 until one day in June, 1910, when I journeyed to her home in the country to see her, she was lost to sight. On the day mentioned she was found to be in the enjoyment of good general health, but she complained that of late the swelling on the forehead had become tender. It seemed to be larger than it was two years before, occupied virtually the whole forehead, jutting over the eyebrow, and it pulsated like normal brain. At the edges of the opening in the skull the bone was tender when touched. The disks were still pale and clear. The sense of smell had not been regained. The patient's memory was stated by her husband, as well as herself, to have become very untrustworthy. The disfigurement by the swelling on the forehead was keenly felt; she was ashamed to go about and children ran from her in fright.

Cosmetic considerations, therefore, had their influence on the patient, and at length she entered the University of California Hospital, where, on Dec. 5, 1910, Dr. Harry M. Sherman removed a tumor which weighed 140 grams. This again was kindly examined by Dr. Ophüls, who reported as follows:

Pathologic Report.—Large nodular tumor about 8 cm. in diameter. The nodules on the surface are closely set, rather regular, from 3 to 5 mm. in diameter, large veins ramifying in the spaces between them. Sections show a thin superficial layer of ordinary fibrous tissue (probably the dura). The tumor consists of a thin framework of vascular fibrous tissue in which there are badly defined rounded spaces tightly packed with partly flat, partly fusiform cells, arranged more or less concentrically. No intercellular substance. These cells resemble those which were found in the medullary spaces of the piece of bone [i. e., the trephine button removed in 1908]. Alveolar sarcoma (endothelioma) of the dura mater.

As Nonne, in the article referred to above, calls the endothelioma of the dura mater benign, I questioned Professor Ophüls on the subject, and he replied: "These tumors are a sort of border-line affair of a very low degree of malignancy, if any. There are other types of sarcoma of the same class, such as the giant-celled sarcomata of the bones and others."

The defect in the patient's skull beginning 1 inch above the eyebrow, extends 3¼ inches backward from the eyebrow; laterally it extends from within half an inch of the median line to the level of the external canthus of the eye. The olfactory sense is not abolished; she can detect strong odors like that of lysol, but more delicate scents escape her. Her visual fields are about normal, according to Dr. Scott Franklin's tests, and her vision is a trifle less than 20/20 in each eye. Her memory is still considered by herself to be defective. Her conduct is certainly more amiable; but this may be due to the consciousness of an improvement in her appearance. Such was her condition on Feb. 7, 1911.

Dr. Sherman describes the surgical aspects of the foregoing case as follows:

Mrs. L. presented herself with a large tumor in the left frontal region. At its lower limit it lifted the eyebrow from the bone, at its upper it extended beneath the hair, and transversely it reached from the midline of the forehead outward as far as the external angular process of the frontal bone. Its general level was 2.5 to 3 cm. above the normal, and the skin covering it showed a broad stellate scar. The tumor pulsated, and it was not known whether it consisted of tumor tissue or was a cerebral hernia of the decompressive order. To determine this question, if it could be determined before operation, a lumbar puncture was done. Only 6 c.c. of fluid were taken, under about normal pressure, but its loss gave the patient a severe headache and nausea and vomiting. The tumor seemed to be softer, but it was difficult to be certain about the change. All unpleasant symptoms lasted only a day or so. The operation planned was to be primarily exploratory, and secondarily curative, if possible, and an effort was to be made to get an improved cosmetic condition. In the hospital, where I kept the patient for a few days for observation, the nurses reported her as being cross, peevish and sometimes sullen.

Second Operation.—I circumscribed the tumor by a curved incision above it and turned down the skin flap, and this was not easy, for the deeper layers of the skin and the tumor were adherent closely, and the skin turned back was so thin, being only skin, that I feared for its vitality in the healing. This exposed the tumor, seen and recognized to be tumor tissue, and found to be growing from the margins of the opening in the skull made by Dr. Bailey at the first operation. Therefore, I circumscribed the tumor by a cut-through the bone, really a slot started in a burr opening, and cut by a de Vilbiss forceps. This did not, however, cross below the tumor above the orbital margin, for there was no space, so here the tumor was separated from the bone and the latter trimmed down to sound tissue by rongeurs, making a skull opening 4 by 6 cm. The fingers then slipped in along the line of separation between the tumor and the dura mater, extradurally, to a depth surprising because it was unexpected. The tumor was easily drawn out; practically no hemorrhage followed; the cavity left would have readily contained a small fist. This cavity was lined below by the dura mater, which was pressed down into a huge hollow in the frontal lobe. Because of the size of the cavity I abandoned my plan of putting in a silver plate to represent the bone removed, and, because I could not believe it right to leave a vacant space in the cranium, nor yet to fill it with salt solution, I put in some gauze sponges, leading the strands of them out on the surface, and tacked the flap back in place with a few silkworm-gut sutures. The patient did well and the skin flap did not die. At a later time (eight or ten days) I reanesthetized the patient and removed the gauze tamponade and formally sutured the flap in place, draining the space underneath it by a single cigarette wick. Again I did not put in the silver plate, for I was not at all sure that it would not be necessary to remove more bone, and that is my feeling yet.

Following the last intervention there was normal healing and the patient left the hospital well, but with a depressed area, which pulsated, in the place of the tumor.

It was noted by the nurses in the ward that the preoperative surliness became a postoperative sunniness, and scowls and complaints changed to smiles and compliments—a complete dispositional reversal.

THE TREATMENT OF ACUTE GENERAL PERITONITIS

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In a discussion on the great advances in the science of medicine, a friend, a professor of pathology, said: "Yes, great advances are being made in pathology and bacteriology and by laboratory research, but the clinicians are making little headway; they are in much the same position they were a generation ago. What have the clinicians done, which will compare with the discovery of antitoxin and the prevention and cure of diphtheria by its use?" I challenged the statement at once.

I said: "I congratulate the research workers on the splendid work they have done and are doing, but when you assume that the laboratory research men are the only ones who are adding to the science of medicine, you simply show that your knowledge of medical progress is limited to your own field and that you do not realize the splendid scientific work being done by your clinical colleagues. What have the clinicians done which will compare in value with the discovery of the antitoxin for diphtheria? I will tell you. They have learned how to recognize general peritonitis, and they have learned how to treat it, so that the mortality, which a generation ago approached 90 per cent. or more, is reversed and we are now able, under favorable conditions in patients operated on early, to save almost 90 per cent., a showing which is quite comparable to the splendid achievements of the antitoxin of diphtheria."

I have been an interested spectator, and, to a limited extent, participant in this wonderful change. I can recall almost from memory most of the important milestones in the progress of events.

Mikulicz in 1880, in operating for the first time on a perforating stomach ulcer, in a way led to the modern surgical treatment of general perforative peritonitis. The value of this work was not at once recognized; in the next decade little was done in the way of operative treatment in cases of general peritonitis. As late as 1894 von Bergmann's assistant, Schlange, in Berlin, in discussing the subject said: "I want especially to emphasize the statement that laparotomy as a treatment of general suppurative peritonitis should be rejected." Beginning with about 1894 a good deal of active work was done in the operative treatment of peritonitis. Stühler of Strasburg (Strasburg Klinik) in 1890 collected reports of seventy-eight cases of drainage of the peritoneum in cases of peritonitis with fifty recoveries and twenty-eight deaths. Körte[1] in 1892 reported nineteen patients operated on for suppurative peritonitis with six recoveries and thirteen deaths. Between 1892 and 1897 a considerable advance was made, so that in 1897 Körte in a second article, which really lays down the foundation of our modern operative treatment, was able to present reports of 133 cases with fifty-one recoveries and eighty-two deaths, collected from Lennander, Rotter, Jalaguier, McBurney, Abbe and Richardson.

I was fortunate enough to be present at the Congress of American Physicians and Surgeons in Washington in 1897 when Senn, Abbe, McCosh, Fowler and Welch in a symposium on peritonitis brought the subject down to that date. In 1900 A. Tietze[2] reported the work from the Mikulicz clinic. He presented some interesting facts.

Mikulicz collected from the literature from 1885 to 1893 reports of thirty-five cases of general peritonitis with thirty-four deaths and one recovery, a mortality of 97 per cent.; from 1894 to 1896, sixty-eight cases with thirty-two recoveries and thirty-six deaths, a mortality of 52.94 per cent. He collected altogether reports of 231 cases with eighty-six recoveries and 145 deaths, a 37 per cent. mortality.

In 1903 Joseph A. Blake[3] reported the treatment of diffuse peritonitis by early incision, with removal of the focus of suppuration and stopping any further leak, lavage of the peritoneum and closure of the peritoneal cavity without drainage.

In 1904 George and Russell Fowler[4] reported 100 operations for general peritonitis in the previous three years with sixty-seven recoveries and thirty-three deaths. They emphasized the importance of the now well-known

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1. Körte: Arch. f. klin. Chir. (Langenbeck's), 1892, xliv, 612.
2. Tietze, A.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1900, v, 15.
3. Blake, Joseph A.: Ann. Surg., 1903, xxxviii, 265.
4. Fowler, G., and Fowler, R. W.: Medical News, May 28, 1904.

and widely adopted Fowler position in the after-treatment of these patients.

In 1905 Noetzel,[5] an assistant in Professor Rehn's clinic at Strasburg, published an article which brings the subject very close to its present stage of development. He advocates:

1. Careful and rapid operating.
2. Removal of the existing pus with irrigation.
3. The removal of the cause of the suppuration or closure of any existing leak.
4. Drainage.
5. Washing out of the stomach.
6. Rectal injections of normal salt solution.
7. Withholding of morphin when possible.

The treatment outlined by Noetzel, plus the Fowler position, gives us the modern treatment of peritonitis most generally adopted. About this same time Murphy formulated the method of treatment which is widely known by his name. To quote from LeConte,[6] the essentials of Murphy's technic may perhaps best be stated under six headings, viz:

1. The rapid elimination of the cause of the peritonitis.
2. Drainage by rubber tube of the lowest part of the pelvis.
3. Elimination of all time-consuming procedures at time of operation.
4. The Fowler position.
5. The absorption of large quantities of water by the rectum.
6. The prevention of peristaltic movements of the intestines by withholding of all food and liquids by mouth.

LeConte says: "While the procedures of Murphy do not present anything particularly new, he has assembled in his technic all of the good things to do, and has eliminated the unnecessary or harmful ones." There can be no doubt but that the enthusiastic advocacy of the scheme of treatment which Murphy has formulated, has accomplished a great deal of good.

To-day the discussion of the treatment of peritonitis might well be considered under four heads:

1. The saline cathartic treatment advocated by Tait, and especially by the gynecologists, which is really a treatment of value, not for peritonitis, but for one of the common results of peritonitis, i. e., paralytic ileus.
2. The rest and starvation treatment emphasized by Ochsner, which is of value, not in general peritonitis, but in local peritonitis to prevent its becoming general.
3. The operative treatment of Blake: rapid elimination of the cause of the suppuration, washing out of the peritoneal cavity with normal salt solution and closure without drainage, unless in the presence of gross lesions demanding it.
4. The operative treatment emphasized by Murphy: rapid removal of cause, drainage without washing out of the peritoneal cavity, and continuous irrigation by rectum with normal salt solution.

I hope to show that all of these methods have their value and that there is a fifth method, or *combination* of methods, the result of a better and simpler assembling of the various means at our command.

I. THE SALINE CATHARTIC TREATMENT FOR PERITONITIS

In what class of cases and under what circumstances is the saline cathartic treatment indicated? Patients die from peritonitis from three causes: 1. General sepsis with bacteremia. 2. From a sepsis due to absorption of toxins from the products of infection in the peritoneal cavity. 3. From absorption of toxins by the mucosa of the intestines from the decomposition which goes on in a paralyzed alimentary tract—intestinal toxemia.

In gynecologic work, in operations on the tubes and ovaries, Tait and other gynecologists found many cases in which, after the operation, the patient would become tympanitic, because of paralytic ileus, usually from a local pelvic peritonitis, often of not severe degree, and if let alone many of these patients died of paralytic ileus from absorption of the toxins developed within the paralyzed bowel. These men soon learned that if they could get the bowels to move, they would usually save their patients. This condition of paralytic ileus is a very common one, varying greatly in degree as to the severity of the symptoms from simple so-called gas pains to complete obstruction, and may complicate many lesions and operations involving the peritoneum. In the cases of paralytic ileus due to a local peritonitis, or a peritonitis of mild degree, like that associated often with a gonorrheal infection of the uterine appendages, the paralytic ileus with its accompanying danger of absorption of toxins from the bowel can often be controlled by saline cathartics, enemas and the use of agents such as strychnin to stimulate peristalsis. In these cases the saline cathartic treatment is often the most valuable treatment that can be employed. Not infrequently, too, in the postoperative care of general perforative peritonitis, as I shall attempt later to show, this cathartic treatment, to overcome paralytic ileus, may be indispensable. Of course, no one who understands the principles on which the treatment of peritonitis is based would for a moment consider the employment of the saline cathartic treatment in a case of perforative peritonitis before operation.

II. THE SO-CALLED REST AND STARVATION TREATMENT

This is the Ochsner method. This method has a rational scientific basis and is of great value in certain cases. It is, however, not properly understood, and is often improperly employed. What is the scientific basis for this method?

As Stokes and Sahli years ago pointed out, the inhibiting of peristalsis by the use of opium, the withholding of food and cathartics and the washing out of the stomach favor the localization and walling off of a suppurative focus in the abdomen, and there can be no doubt that a local peritonitis can often be kept a local process, and a general infection prevented, by this rest and starvation treatment.

The rest and starvation treatment is indicated: (1) in cases of acute abdominal lesions of uncertain diagnosis in which it is thought best to watch for a time their development; (2) in cases of local peritonitis in which for some reason operative interference is not indicated; (3) as I shall show, in the after-management of a case of peritonitis, in which operation has been done. It is, on the other hand, never indicated as the treatment of a patient with general perforative peritonitis.

III. THE OPERATIVE TREATMENT OF BLAKE

Blake has shown that in a large proportion of cases, if the perforation causing the peritonitis is properly closed, or the focus of infection causing the peritonitis is completely removed, and the noxious pus and toxins washed out of the peritoneal cavity with normal salt solution and the peritoneal cavity closed without drainage, the patient goes on to a recovery. This treatment shows the great power possessed by the peritoneum of protecting itself against pus infections.

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[5] Noetzel: Beitr. z. klin. Chir. (Bruns'), 1905, xlvii, 241.
[6] Le Conte: Ann. Surg., 1906, xliii, 231.

Dr. Blake has kindly given me the following outline of his management of cases of general peritonitis:

> It is well to divide these cases into two classes for treatment: first, those in which the peritonitis is due to a dissemination of the infection from an infected organ, such as an appendicitis; and in the second group, those cases in which the peritonitis is due to a perforation or rupture of the alimentary canal.
>
> The first class can be further subdivided into two classes: one in which there has been no localization of the infection and the process is evenly disseminated throughout the abdomen. In this class, when the cause of the peritonitis, as the appendix, for instance, has been removed, there is little or no difference in the appearance of the various portions of the peritoneum. In these cases I consider it unwise to attempt to drain the entire abdominal cavity, and simply put a drain through the wound in order to avoid mural abscess formation. Also, unless the exudate is very thick, I do not wash.
>
> In the second group there has usually been pocketing and the formation of local abscesses lined more or less with necrotic fibrin. In these cases I wash out and drain the pockets. Inasmuch as the process has usually pocketed in the pelvis, the drains usually go to the bottom of the pelvis.
>
> In the second class, namely, cases of peritonitis due to perforations, I uniformly wash the abdomen out in order to remove the material extravasated from the alimentary canal. In these cases I employ the same rule for drainage as in the cases proceeding from infected organs, that is, drain when there is necrotic material remaining in the abdomen; otherwise, no drains.
>
> To resume: My treatment is practically the same as that I advocated in Chicago in 1908, with the exception that I do not wash quite as much. For instance, patients with only a seropurulent exudate are not washed at all; neither are they drained:
>
> My rules for employment of drains are as follows:
>
> 1. Never use drains unless there is dead material which will remain as a nucleus for continued infection.
> 2. When it is necessary to drain, use a large and competent drain. For this purpose I use a double rubber drainage tube, one limb of which is fenestrated, and through this limb a wick of gauze is passed for capillary drainage.
> 3. Drains, when used, should be left in until all necrotic material has escaped, when they can be rapidly removed.
>
> I have given up the use of cigarette drains, considering them inefficient and therefore useless. A short rule I sometimes use is, drain when you have to drain; otherwise don't drain at all.

IV. MURPHY METHOD

The Murphy scheme of management is the one most widely employed in this country at present. Murphy emphasizes the importance of tubular drainage; strongly condemns irrigation of the peritoneal cavity; insists on continuous irrigation with normal salt solution by rectum, and employs the extreme Fowler position, having the patient sit up in bed. The remarkable results which Murphy has obtained by his method certainly furnish a very strong argument and constitute certainly one of the reasons for its extensive adoption. I do not think that it is well to be guided entirely by statistics in a matter of this kind, however, and the results of his early work—twenty-nine cases of general peritonitis with but one death—is probably the accidental grouping of a large number of favorable cases which will probably not soon be repeated.

My own conclusion after studying this matter with a good deal of care is that these four methods—the saline cathartic method of Tait, the rest and starvation method of Ochsner, the Blake scheme and the Murphy scheme—all have definite elements of value and fields of usefulness. On the other hand, the value and importance of these methods have often been much exaggerated by their partisan advocates, and the real value of other schemes belittled to the disadvantage of their patients.

In the light of the evidence now before us, what should be our scheme of management of cases of general peritonitis?

DIAGNOSIS

Diagnosis must be made early, within the first few hours, certainly within the first twelve, if we are to hope for much from surgical interference. This diagnosis must be made early from a few data: pain, tenderness, muscular rigidity. We cannot afford to wait for a high leukocyte count, for a marked increase in temperature, for a tympanitic abdomen and the thready pulse and dusky face of dying peritonitis. This is true especially of perforative peritonitis from the alimentary canal. Take a case of typhoid fever with perforation. If the patient is to be saved, operation must be performed because he has pain, tenderness and a rigid belly. One must not wait for the tympany and thready pulse, which are really not signs of disease, but signs of death. This sort of procrastination reminds me of the medical men who bring me cases of carcinoma of the breast, which they have watched for months patiently to see the case develop glands in the axilla, a retracted nipple and evidence of cachexia, before making up their minds as to the diagnosis of malignancy.

SURGICAL MANAGEMENT

In discussing the modern surgical treatment of peritonitis and attempting to estimate its value, we must assume that we have made a moderately early diagnosis and that the surgical interference is undertaken within a reasonable period after the onset of the peritonitis. I have frequently been called to operate in neglected cases, in which the patient was blown up like a barrel, with pinched face, cold extremities and without a radial pulse. I believe in giving a patient with peritonitis the benefits of an operation, if there is the least possible chance; on the other hand, it is a mistake to operate on patients who are evidently *in extremis.* The most important function for us to perform, in the propaganda for better medical management of peritonitis, is to teach the importance of early diagnosis.

What shall be the scheme of surgical management? I should like to discuss this under several heads, viz: (1) anesthesia; (2) incision; (3) proper surgical disposal of the perforation or focus of infection; (4) testing the peritoneal cavity to determine whether the peritonitis is local or general; (5) when there is free pus or noxious material in the general cavity, its removal by irrigation with normal salt solution; (6) drainage; (7) surgical dressing; (8) after-treatment—the modified Fowler position; (9) intermittent salt solution per rectum; (10) washing out the stomach; (11) question of medication, morphin and strychnin; (12) water and food by stomach; (13) paralytic ileus and the saline cathartic treatment.

1. *Anesthesia.*—The normal anesthetic in these cases is drop-ether, properly given. In cases in which the patient is in very bad condition, nitrous oxid gas should be employed, unless there is a heart lesion, and then ether is safer.

2. *Incision.*—The first incision should be made over the suspected focus. As a muscle-splitting incision for an appendix case, or a median line incision above the umbilicus for a stomach or duodenal case.

3. *Perforation.*—The perforation or leak must be so handled as absolutely to prevent any further leakage. I would be very insistent on this point. I have too often seen cases in which the peritoneal cavity was simply opened and drained without closing the leak permanently, and in which the patient was almost certainly lost because the leak continued. The teaching that if it is difficult and time-consuming, the leak should not be sought for and closed, is bad teaching. I should say that it is so important for the safety of our patient to close every leak or perforation of the alimentary canal causing peritonitis—that a most thorough closure should be obtained even at the cost of some risk and time. It is only in extremely difficult cases, with patients in such bad condition that they will evidently stand nothing in the way of operative interference, except an incision and the introduction of a drain, that we should make an exception to the rule. In cases of peritonitis from suppurative foci, other than the alimentary canal, as the uterine appendages, it is desirable to remove the focus entire, if the condition of the patient permits; if the patient's condition is bad, we can trust to drainage alone with somewhat better chances than in the cases with alimentary canal perforations.

4. *Testing the Peritoneal Cavity to Determine Whether the Peritonitis is Local or General.*—This, to my mind, is one of the most important and interesting developments in the modern technic. As an illustration let me cite two cases of appendicitis.

CASE 1.—A young man of 20 was brought into the hospital with the diagnosis of appendicitis. He had been ill several days; from the history, a perforation had occurred a few hours before. I operated at once and found a perforated appendix with free pus about it. This was removed and the stump invaginated into the cecum. I then took a female glass catheter and tested the abdominal cavity. I placed my thumb over the open end, introduced the point into the cul-de-sac, removed my thumb for an instant and then replaced it and withdrew the catheter, employing it in much the same way that one does a glass pipette in picking up urine from a bottle. As I withdrew the catheter I found the lower 5 or 6 inches full of creamy pus. I then knew that I had a free general peritonitis to deal with and handled it accordingly.

CASE 2.—A boy of 10 gave much the same history. I operated on him in the same way, and when I tested his cul-de-sac found nothing in the catheter except a small amount of clear peritoneal fluid, and I therefore handled this case as one which was still limited to the region about the cecum although the pus was free in that part of the peritoneal cavity.

5. *Pus in the General Peritoneal Cavity.*—When there is free pus or other noxious material widely disseminated in the peritoneal cavity, I believe that it should be removed by irrigation. No one would doubt the advisability of washing beer and sauer-kraut and wiener-wurst out of the peritoneal cavity, in a case of perforating ulcer of the stomach; why should we not do the same for fecal pus or any pus?

When I have tested the peritoneal cavity with a glass catheter in the way I have described and found free pus, I then make a small buttonhole counter-opening in the median line just above the symphysis; through this a large glass tube is carried to the bottom of the cul-de-sac; then through the main incision, whether for appendix or stomach, another similar tube is carried to the seat of the perforation or focus, and this is attached by a rubber tube to an irrigator filled with normal salt solution at 112 F. and the peritoneal cavity is flushed out with several quarts of this irrigating fluid, until the fluid comes out perfectly clear. Practically no time is lost in this part of the operation as we are closing the main incision while the water is running.

6. *Drainage.*—Rubber tubes should never be used in these cases for drainage, at least unprotected rubber tubes. Cigarette drains are much to be preferred. A long cigarette drain made of a small rubber tube about as large as a No. 10 or 12 catheter, about which gauze and gutta-percha tissue is wrapped, until it is the diameter of a lead pencil or little finger, is carried through the small buttonhole in the median line to the bottom of the cul-de-sac. Similar drains are carried to the point of closure of the perforation or removal of the inflammatory focus and the rest of the main wound is closed.

6. *Dressing.*—The surgical dressing should be a copious, moist, not wet, dressing of hot boric solution. A moist dressing picks up the discharge better than a dry dressing. These dressings should be changed every six to twelve hours, as demanded by the amount of discharge—usually twelve hours is often enough—sometimes twenty-four.

8. *Position.*—The Fowler position is of much value for these patients, but unfortunately an exaggerated position has often been insisted on to the great discomfort and disadvantage of the patient. I am sure that we have obtained all the possible benefits of the position by allowing the patient to lie flat in bed and elevating the head of the bed from 18 to 20 inches on two chairs. In order to prevent the patient from sliding down in bed a bolster is placed below the buttocks and held fixed to the head of the bed by strips of roller bandage. I should like to emphasize the importance of this method of using the Fowler position. I have seen patients positively tortured by being compelled to sit up in bed because the attending surgeon has been led to believe that this position was indispensable to the modern method of treating peritonitis.

9. *Saline.*—I think that we are all agreed that furnishing these patients with a large amount of fluid by the bowel is one of the important factors in securing for us our improved results. This matter has, however, been greatly overdone. Continuous irrigation by complicated apparatus is often insisted on, much to the unnecessary discomfort of the patient. The presence of a tube constantly in the rectum is annoying. What we desire to accomplish is to furnish the patient a large amount of water so that the kidneys can act well and excrete the toxins, and so that the system will have enough fluids for the comfort of the patient. This can be done by interrupted rectal irrigation with much greater comfort to the patient and with all the benefits that can be obtained from the continuous irrigation. The continuous irrigation, if pushed, may be a positive danger, sometimes producing edema of the lungs and of the extremities. The rule is to give from 6 to 16 ounces of normal salt solution every two to four hours, to be retained, and a cleansing enema once or twice a day.

10. *Stomach Washing.*—If the patient vomits repeatedly, the stomach should be washed out. I do not believe, however, in making gastric lavage the rule. If the vomiting persists, the lavage should be repeated. Great care should be taken to prevent, if possible, the development of acute dilatation of the stomach, a condition very similar to paralytic ileus. If the patient does not vomit, or if the vomiting is slight and soon ceases, the patient should be given water by the mouth, at first in small amounts, and as the conditions improve this can be increased with a corresponding decrease in

the amount given per rectum. If at the end of twenty-four hours after the operation the general condition is good, milk and vichy in small amounts—an ounce each —every hour, can be begun.

11. *The Question of Medication.*—Morphin should as a rule be withheld; and still, in a large minority of cases, when the pain and restlessness are great, it is often of great benefit, giving the patient sleep, better respiratory action and increasing his chances of recovery.

12. *Ileus.*—Paralytic ileus is sometimes a serious or even fatal complication. It is here that proper early use of saline cathartics has been of value. Most patients have more or less gas pains. These should be handled by stimulating injections given low in the rectum; I usually use magnesium sulphate and glycerin and water in equal parts. Where the distention is considerable and persistent, saline cathartics in small repeated doses, with stimulating enemas and strychnin in moderate doses, should be employed. In a few cases secondary operations for localized abscesses will be necessary, and in a few cases in which the ileus persists enterotomy will be required.

I have found that one of the most valuable means of combating paralytic ileus is castor oil in small and repeated doses. I usually give a teaspoonful every hour until peristalsis, with expulsion of gas and fecés, is secured.

I believe that following out this general scheme, we can, in cases early diagnosed and early operated on, succeed in saving a very large percentage of our cases of general peritonitis. And when our laboratory colleagues ask us what clinical surgery has done, we can tell them that for one thing it has solved the problem of peritonitis; that under favorable conditions it can save 90 per cent. of these patients who but a few years ago were almost certainly doomed to die.

150 Michigan Avenue.

RECONSTRUCTIVE ENDO-ANEURYSMORRHAPHY: A CASE REPORT

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History.—O. K., a prisoner in the Zone penitentiary at Culebra, Canal Zone, a Jamaican negro, aged 27, presented a history of syphilis from 1903, the only evidences of which to be noted at the time of examination were a moderate general lymphadenitis and slight arteriosclerosis. This man received a gunshot wound of the right leg on the night of Dec. 31, 1909, while attempting burglary. The missile, a 38-caliber revolver ball, entering 2½ inches above, and on a plane ½ inch posterior to, the upper extremity of the fibula, in the erect position, direction inward, and slightly forward and downward, becoming imbedded in the internal condyle of the femur. The patient was admitted Jan. 1, 1910, to Culebra Hospital. The wound healed without suppuration and the patient was discharged from hospital Jan. 25, 1910. He worked in the chain-gang building roads until Aug. 13, 1910, when he was readmitted to the hospital. He stated that during April he noticed a slight swelling in the popliteal space, which very gradually increased in size, and that later he began to have some pain back of his knee, which came on at intervals; that these attacks of pain later increased in frequency and severity until on admission the pain was constant. There was also, at this time, considerable swelling of the leg, due to pressure of the tumor on the popliteal veins. Examination showed an expansile tumor, a bruit and all the classical signs of aneurysm. The patient was put to bed with the knee slightly flexed and elevated, and was kept there until September 15. The rest and posture relieved the pain and swelling of the leg somewhat, but the aneurysm increased perceptibly in size during the month he was at rest.

Operation.—Sept. 15, 1910: A tourniquet on the thigh made the operation practically bloodless. When the aneurysm was opened much lamellated fibrin was found; this was removed and the sac washed out and found to be about 4 by 2¾ by 2 inches in size. The arterial openings, i. e., the point of entrance of the popliteal artery into the sac and its point of exit from the sac, were about an inch and a quarter apart. As regards classification, the aneurysm should probably be considered as of the spherical type, from its evident mode of origin and from its shape. At the same time it partook of the character of a fusiform aneurysm, in that the arterial openings were an inch and a quarter apart, and that there was no groove or furrow between these openings to mark definitely the anterior wall of the artery. The character of the sac walls differed very much in different areas. The anterior wall of the sac, between the arterial openings and for some distance on all sides of this point, seemed firm, elastic and resistant, while from this area it gradually thinned out until the posterior wall of the sac was as thin as tissue-paper. A point of particular interest in this case was the presence of a second sac or diverticulum opening off the main sac cavity on its anterior surface at a point ¼ inch below the proximal arterial opening and on a line between the two arterial openings. Or, it might be said that this second sac opened off the anterior wall of the artery, except for the fact that the artery was so flattened out and obliterated that it seems simpler to call it the anterior wall of the sac. This diverticulum was an aneurysm of true spherical type, about ¾ inch in diameter, its opening into the large sac being about ⅓ inch across. It contained no clot or fibrin and its walls seemed firm and elastic, and lined with arterial intima over its whole extent. It was wiped out firmly with a pledget of gauze with the idea of encouraging the deposition of fibrin within the sac, and in the subsequent proceedings its presence was disregarded. The two arterial openings were on the same level, were easily accessible at the bottom of the field of operation, and, in the belief that there was enough firm sac wall available, the artery was reconstructed. For this purpose interrupted sutures of fine chromic gut were used, placed about 3/16 inch apart, using very fine, full-curved round intestinal needles. After reconstruction of the artery the sac was obliterated by layer on layer of continuous plain catgut sutures, following Matas' second method of closure, leaving the sac buried in the wound without inversion of the skin-flaps, and without drainage. After the second row of continuous sutures was in place the tourniquet was removed. Slight oozing of bright red blood showed immediately in the suture line, but it soon stopped and the operation was completed and the leg dressed on a straight posterior splint. There was immediate restoration of circulation to the leg, pulsation being felt in the posterior tibial and dorsalis pedis arteries.

Postoperative History.—From the time of the operation on there was never any difference in temperature or sensation between the foot and leg of the operated side and that of the sound side. The skin sutures of silkworm gut were removed on the twelfth day. The patient was kept in bed with leg on a posterior splint for three weeks, when he was allowed up, with a posterior molded felt splint in place for another week to prevent his flexing the leg. He was discharged from hospital October 16 and returned to work in the road-building gang at once. The man was seen repeatedly after he left the hospital by me, the last time on Feb. 19, 1911, and he stated that the leg had given him no trouble, and he had worked every day since he left the hospital.

October 14, two days before the man went out of hospital, and twenty-nine days after the operation, his leg was examined carefully in regard to its circulation, and it was found that the pulsation could be felt as readily in both the posterior tibial and the dorsalis pedis in the right (operated) leg, as in the left; at least, if there was any difference in the strength of impulse in the two sides it could not be made out by palpation. (We did not test the blood-pressure otherwise.) No impulse could be felt in the reconstructed portion of the popliteal, owing to scar tissue.

Professor Matas[1] brings up the question as to the continued competence of the reconstructed portion of the artery, and in order to decide the point, if possible, the man was reexamined again Feb. 19, 1911. He was very muscular and quite fleshy. Impulse in the popliteal at the seat of operation could not be made out. The posterior tibial and dorsalis pedis could be made out only with considerable difficulty on the right side, while they were distinctly palpable on the left, the impulse even being visible in the left dorsalis pedis.

Now to determine whether the stream causing the faint impulse really came through the reconstructed artery, an assistant made digital pressure over it while the branches were palpated and it was found that as long as the pressure over the popliteal continued there was no impulse in the branches, but that pulsation immediately returned when the pressure was discontinued, proving that the lumen of the reconstructed artery, while it has become considerably narrowed, still carries part of the blood-supply to the foot and leg.

This observation would seem to bear out the contention that in these cases of reconstruction in which there is permanent recovery, the reconstructed portion of the artery becomes obliterated ultimately, remaining patulous long enough, however, to carry on the circulation until the collaterals develop.

Regarding the second aneurysmal sac, which was left as a spherical aneurysm on the anterior wall of the reconstructed portion of the popliteal, I had serious misgivings at the time as to the wisdom of the treatment of it, and that was the reason for keeping the parts at rest for so long after the operation. However, its walls seemed to be about as firm as the material from which the artery was reconstructed and it impinged on the solid structures at the back of the knee, giving it support, and there were hopes that it might be obliterated, which, in the light of the last examination, seems to have been its fate.

The above is offered for what it is worth as an argument in favor of the reconstructive operation. The conditions presenting in this case certainly cannot be considered to have been ideal for this operation, yet the results have been all one could wish.

A SIMPLIFIED METHOD OF STAINING BACTERIA, CAPSULATED BACTERIA IN BODY FLUIDS, AND PREPARATIONS FOR OPSONIC COUNTS

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For over four years I have used with great satisfaction the following method for the staining of bacteria and body fluids in place of Löffler's methylen-blue, in the staining of preparations for the opsonic count instead of Leishman's or Wright's blood-stain, and in the staining of capsulated bacteria. I describe it here in the belief that it may be of help to clinicians as well as to laboratory workers.

PREPARATION OF STAINING SOLUTIONS

The preparation of this stain requires no saturated alcoholic solutions, nor the troublesome "1 to 10,000" aqueous solution of caustic potash necessary in the preparation of Löffler's methylen-blue solution. It is easily prepared in a few minutes by any physician or druggist and keeps indefinitely. The addition of a few crystals of sodium carbonate may be necessary from time to time to counteract the acidity of the corrosive sublimate which is used as a fixative.

1. Saturated aqueous solution of corrosive sublimate (to be used as a fixative).
2. Aqueous methylen-blue solution prepared as follows:

℞.	gm. or c.c.
Methylen-blue ("medicinally pure")	1
Sodium carbonate, U. S. P., cryst.	1
Water	100

The dye and the sodium carbonate are thoroughly dissolved in the 100 c.c. of water by shaking. If not thoroughly dissolved there may be a precipitate on staining.

These solutions are best kept in bottles wide-mouthed enough to allow the passage of slides or cover-glasses and stoppered with corks or glass stoppers.

METHOD OF STAINING

Staining of Single Preparations.—The smear is made on a slide or cover-glass and allowed to dry in the air:

1. Fix (by immersing the preparation in the saturated corrosive sublimate solution for from ten to twenty seconds).
2. Wash in running water.
3. Stain with the methylen-blue solution described above, by immersing the smear in the staining solution for from five to thirty seconds.
4. Wash thoroughly in running water and dry between layers of filter-paper; mount and examine in the ordinary way.

Staining of Several Preparations at One Time.—In the laboratory where it is necessary to stain many preparations the following method is recommended:

The smears are made on slides, are labeled with a blue glass pencil (A. W. Faber) and dropped in a glass slide box.

1. Fix by pouring the saturated corrosive sublimate over the slides, filling the glass slide box with it, and allowing it to act for from ten to twenty seconds.
2. Pour off the corrosive sublimate (back into the bottle).
3. Wash thoroughly in running water, holding the slides in the box by placing the fingers over the top of the box.
4. Stain with the methylen-blue solution[1] (described above) for from five to thirty seconds, by pouring the solution over the slides, filling the slide box with it.
5. Pour off the methylen-blue solution (back into the bottle).
6. Wash thoroughly in running water.
7. Dry between layers of filter-paper, and examine in the ordinary way.

Staining of Preparation for the Opsonic Count of Bacteria Other Than Tubercle Bacilli.—The method just described for staining several preparations at one time I have used since August, 1906, in staining preparations for the opsonic count of bacteria, other than tubercle bacilli, in place of Leishman's or Wright's blood-stain. It has given great satisfaction from the standpoint of results, economy, and saving of time. The great number of slides I had to stain daily for the opsonic count formerly meant the spending of hours in staining alone, while with this method it is now a question of minutes. A large amount of staining fluid is consumed when the "blood-stain" is used, because when once applied it cannot be used over again, while this methylen-blue solution can be used over and over again indefinitely; the economy is obvious. As to results, the staining of leukocytic granules (basophilic) with any of the standard blood-stains interferes with the rapid counting of the bacteria, while with this stain the protoplasm is pale blue, granules are not stained at all, and the bacteria and nuclei are stained deep blue. Hence the counting is rapid and without errors. This method, then, gives brilliant results, is economical, and saves a great deal of time.

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[1] Private communication in reference to the case reported.

[1] In the staining of capsulated bacteria constant good results are obtained when the preparations are overstained, that is, allowed to remain in the stain for from five to ten minutes instead of from five to thirty seconds, and are not so thoroughly washed in water.

Method of Staining Capsulated Bacteria.—Thin preparations are made from body fluids (saliva, pus, exudates, etc.), are fixed, and stained by either of the two methods described, for single preparations or for staining several preparations.[1] The capsules show up invariably very distinctly. They are stained pale blue, while the bacteria are stained deep blue. Good results have been obtained, not only in smears from body fluids, but also in smears made from cultures (especially from the water of condensation) of the *Bacillus mucosus capsulatus*, the *Streptococcus mucosus capsulatus* and the pneumococcus. The advantages of this method of staining capsulated bacteria as compared with any other method I know of are obvious and need no further comment.

GENERAL APPLICATION AND RESULTS

This stain can be used in every case in which Löffler's methylen-blue would be used. It has all the advantages of the latter minus the disadvantage due to heat fixation. Thus, in smears of pus or body fluids, the protoplasm of the individual pus cell is stained light blue and its outline is definitely made out. Intracellular organisms (gonococci, meningococci, etc.) are seen within the protoplasm and not in a blank space around the nuclei of the pus cell, as is the case with Löffler's stain.

Its use in the staining of blood-smears for the opsonic or phagocytic count has given me more satisfactory results, is more economical, and takes considerably less time than any other stain(or blood-stain) recommended for this purpose.

Its use as a stain for capsulated bacteria, the ease with which it can be applied generally, and the more constant results obtained with it, will make this stain, it is hoped, a useful addendum to the present standard laboratory stains.

Finally, because of the ease with which this staining solution is prepared, the cleanliness with which it can be handled, and its advantage of requiring no Bunsen burner or flame of any sort, it is hoped that this method of staining will be of help to the clinical man in keeping up bacteriologic examinations in his office in the routine of his daily practice, without having to resort to a fully equipped laboratory for that purpose.

483 Beacon Street.

REPORT OF A CASE OF STERILITY IN THE AGED CURED BY THE USE OF THE WYLIE DRAIN*

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History.—Mrs. J. S., aged 50, white, negative family history, had the usual diseases of childhood. With the exception of typhoid fever, eighteen years ago, she has never had a serious illness. The onset of menstruation occurred at 13. For the first six or nine months the flow was somewhat irregular and scant. After the first year it has been regular, about every twenty-eight days, although variations of three or even five days are not unusual. Bleeding usually lasted for four days, the last twenty-four hours being rather scant; the amount is about normal, the patient requiring seven or eight napkins daily for the first three days. Menstruation is of the same character now as it was ten years ago; there are no symptoms of the menopause. The patient usually has a slight feeling of weight and discomfort in the lower abdomen for the first day of the period; she has never had severe dysmenorrhea. Leukorrhea has never been profuse or pathologic. The patient usually has a slight, whitish discharge for a few days following the cessation of menstruation. The patient was first married when she was 22. When she was 31, her husband died of pneumonia; until a few months prior to his death, he was a strong healthy man. Five years later, or when the patient was 36, she married a second time. She has never been pregnant although she has always desired children, and has never adopted any means to prevent conception. Her chief complaint is of sterility. The patient has no subjective symptoms, and, in fact, first visited me to inquire concerning her sister on whom an operation for laceration of the cervix and perineum had been performed; at this time she lamented the fact that she was sterile. On inquiry it was learned that during the life of her first husband, a dilatation and curettage had been performed with the hope that this might result in widening the cervical canal so that pregnancy could take place. Dilatation without curettage was performed four years after her second marriage.

Examination.—The patient is a rather large, plethoric woman weighing 150 pounds. She is distinctly well preserved and gives the impression of being at least five years younger than she is. The bowels are regular; the heart and lungs are normal; the urine is negative. She occasionally has slight occipital headaches, not infrequently just before the menstrual periods; these, however, are never severe. Abdominal examination was negative. Pelvic examination showed that the outlet was nulliparous; the vagina was rather deep, and the anterior and posterior walls were in apposition. The cervix was normal in its transverse diameter, but was longer than usual and extended for at least one and one-half inches into the vagina. The external os was small although far from being of the pinpoint variety so frequently seen in young women. No evidence of infection was present in any part of the genital tract. The cervix pointed at right angles to the axis of the vagina. The uterus was normal in size, shape and consistency; it was in anteposition and movable. The ovary on the left side could be felt as an almond-shaped body, if anything rather larger than normal. It was movable and slipped easily between the fingers. The ovary on the right side was not palpated. No induration or other evidence of intraperitoneal inflammation was present.

Prognosis.—Taking into consideration, the fact that the patient had already had two dilatations performed for sterility, both at a period of life when conception was more likely to result than at her present age, a very guarded prognosis was given regarding the probability of pregnancy ever taking place. There was no history pointing toward sterility in the husband. After the couple had consulted for a few days they decided to have an operation performed.

Operation.—This was performed ten days before an expected menstrual period under ether anesthesia. The examination at this time confirmed the previous negative pathologic findings of the former examination. The right ovary could now be easily felt and was *normal*. After the ordinary antiseptic precaution, the cervix was widely dilated and kept on stretch for ten minutes. The uterine cavity was then explored; no curettage was performed. A rather thick Wylie drain[1] was inserted and the vagina lightly packed with gauze to keep the drain in position.

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*Read before the Philadelphia Obstetrical Society, Feb. 2, 1911.

Postoperative History.—The vaginal gauze was removed in twelve hours. The menstrual period which was due ten days after the operation was delayed for five days; the patient was kept in bed until this had passed. The Wylie drain was allowed to remain in place for four weeks, during which time the patient was kept under observation. The next menstrual period, which was expected a little less than a week after the removal of the Wylie drain, never appeared, and a month or six weeks later, a positive diagnosis of pregnancy was possible. Pregnancy and labor were normal, the child's position being L. O. A. Labor lasted about sixteen hours, pains being severe during the last five hours. The perineum was torn in the median line for a depth of about 0.5 to 0.75 inch; this was repaired. The child weighed eight pounds. The puerperium was normal. Mother and child have done well.

The interesting points of this case seem to be the advanced age of the patient. It should, however, be borne in mind that she was a strong, healthy, well-preserved woman and that no symptoms of the menopause had appeared. Regular menstruation is not unusual until forty-eight or fifty as I have shown in a previous paper[2] in an analysis of 200 normal cases. In this study it was found that the average age at which the menopause appeared in this country was between 48 and 49, and that 21 per cent. of women menstruate until 50. Since the joint report of Dr. Barnard and myself[3] before the Philadelphia Obstetrical Society early in 1910, of a series of fourteen previously sterile women, in which five, or 35.71 per cent., became pregnant within one year following operation, I have had two additional cases, both occurring in women who had been married for two years and both of whom were desirous of children. In one, the patient became pregnant two months after the insertion of the Wylie drain. The second case was unsuccessful. A number of additional successful cases have occurred in the gynecologic department of the University Hospital. I would like again to emphasize the fact that the Wylie drain should never be inserted except under strict aseptic precautions, the same antiseptic and aseptic preparations being adopted for its use as for a vaginal hysterectomy or other major operations. Neither should the drain be used unless inflammatory lesions of the genital tract can be absolutely excluded. Patients in whom this form of treatment is adopted should remain in bed for ten days following the operation, and should be kept under close observation during the entire period that the drain is in place. No bad results have ever followed the use of the Wylie drain in my hands. In cases of sterility it is best to operate about ten days or two weeks before an expected menstrual period. In at least two cases which have come under my observation, conception has taken place while the drain has been *in situ*.

Just why pregnancy, after the age of 44 or 45 should be so rare as it is, is a little difficult to explain on purely anatomic grounds. Conception in the normal individual is always possible so long as ovulation persists. We have no means at our command of ascertaining exactly when ovulation ceases in any given case; however, we know that in the majority of cases ovulation and menstruation are synchronous.[4] And on this basis it would seem fair to assume that pregnancy would not be unusual so long as the latter function was in evidence. Despite this, it is a clinical fact that pregnancy, after 45 is rare and after 50 is exceedingly uncommon. Numerous cases, however, have been reported; indeed, instances have been recorded in which pregnancy has occurred some time after the entire cessation of menstruation. Buckle[5] reports a case occurring in a multipara of 50 years of age after cessation of menstruation for eleven years. Before subjecting a woman to any form of operative treatment for sterility, the husband should invariably be examined for aspermatism.

1503 Locust Street.

SYPHILITIC HYPERTROPHY OF THE INFERIOR TURBINATES WITH REPORT OF A CASE *

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"It is difficult to mistake secondary syphilis of the nose for any other disease when a careful history is taken and a thorough examination is made." That is a "bromid" from one of our recent American text-books. It is unscientific, unpractical and, withal, untrue, for the anamnesis of the syphilitic is notoriously a history of guile, and the thorough clinical (which is evidently to be understood in the above passage) examination is often the ideal rather than the reality, for reasons with which the practical man is quite conversant.

Moreover, if it were difficult to mistake secondary syphilis of the nose for any other disease, it obviously follows that it would likewise be difficult to mistake any other disease of the nose for secondary syphilis, and the fallacy of such an attitude must at once be apparent. Even a negative bacteriologic examination would not be conclusively diagnostic, as everyone is aware, and while a positive finding of the spirochete would be more or less binding, yet, even here, the diagnosis is not infallible.

As a matter of fact, syphilitic lesions of the nasal mucosa are comparatively rare, which may or may not account for the scant attention the subject receives in most of the text-books. Yet, it is a matter of very great importance to the victim. In a practice of thirteen years I do not think I have seen (perhaps I should say recognized) more than half a dozen cases of undoubted secondary luetic rhinitis.

I believe we may safely say that there is no really typical appearance of intranasal secondary syphilis. Hence, a diagnosis, *ab inspectione*, we might aptly characterize as a diagnosis *sine circumspectione*. Even syphilitic ulceration of the septum, with perforation, does not carry with it any certainty of clinical diagnosis, for ulceration and perforation of the septum depending on some utterly different etiology may yet present an appearance which, on mere inspection, is wholly impossible of differentiation. In other words, while the secondary ulcer on the mucous membrane of the pharynx and fauces is usually quite characteristic (the familiar mucous patch), my limited experience teaches me that the ulcer occurring most often on the nasal mucosa is far less typical, being of the superficial variety. The fact may be, and probably is, due to the physically and physiologically more resistant tissues in the nares, together with possibly a thinner mucosa proper.

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[1] The Wylie drain is a form of stem pessary, made from hard rubber, and is about 5.5 cm. in length. Along the edge of the stem is a groove. The base of the pessary is about 1.5 cm. in diameter. The diameters of the stems vary from 4 to 8 mm.

[2] The Menopause, Am. Jour. Obst., 1910, lvi, No. 2.

[3] Dysmenorrhea in Nulliparous Women Without Gross Local Lesion, Am. Jour. Obst., 1910, lxi, No. 5.

[4] Leopold and Mironoff: Arch. f. Gynäk., 1894, xlv, 506.

[5] Childbirth After Apparent Menopause, The Journal A. M. A., Aug. 13, 1910, p. 568.

* Read in the Southern Section of the American Laryngological, Rhinological and Otological Society at Lynchburg, Va., Jan. 22, 1911.

It is my belief, then—and at least I shall confess it to be true so far as my own present powers of diagnosis are concerned—that, excepting the primary chancre, the only cases of nasal syphilis that are usually promptly recognized on clinical examination are those that are first seen in the tertiary stages, when gummatous and necrotic processes are in extensive evidence.

Hypertrophy of the turbinates is a secondary manifestation of lues. The condition locally presents neither more nor less of the symptomatology of hypertrophy due to other causes, such as acute coryza, hypertrophic rhinitis, vasomotor rhinitis, hay fever, etc. It is said that the middle turbinates are most often involved in syphilitic hypertrophy. In the few cases I have seen this has not been my experience. My limited observation shows the more frequent involvement of the inferior turbinates. I have no doubt that ulceration, however, seems to be oftenest of the superficial variety and not to be easily differentiated from superficial ulceration of a non-specific type.

Ulceration, we must all agree, is commonly seen along with intranasal hypertrophic changes, and may readily occur as the result of pressure, or of nutritional errors, or from the atmospheric erosion due to narrowing of the passages. Indeed, while I freely admit I may be mistaken, I am not at all sure that the so-called superficial ulcer of intranasal secondary syphilis ever occurs in the absence of marked hypertrophy; hence, it would seem to be a question whether there really exists such a specific lesion, or whether the ulcer is not really due in all cases to mechanical or nutritional disturbances.

These, then, constitute my reasons for believing that the diagnosis of secondary intranasal syphilis is far from being a simple matter of inspection and subjective history. After all is said and done, the good old-fashioned therapeutic test may fairly be considered our safest guide in these cases. These lesions will not respond to any kind of topical treatment whatever, and they surely will respond to the administration of mercury. The prognosis appears to be uniformly good under appropriate treatment.

REPORT OF CASE

G. B., a man, aged 34, employed in an office, presented himself with symptoms indicating a severe chronic coryza, or vasomotor rhinitis. He had no pain, in fact, no other symptoms but the intolerable stuffiness of the completely blocked nasal passages and the annoyance of the copious mucous discharges. Inspection revealed only enormously hypertrophied inferior turbinates, yielding but slightly to cocain and epinephrin, and substantial adhesions between inferior turbinate and septum on the left side, while on the right side appeared four or five shallow ulcerated spots the size of a buckshot and covered with glairy mucus on the anterior aspect of the turbinate and on the septum. This condition had been present, he stated, for about three months. Previous to consulting me he had been treated by another rhinologist, who, besides using the usual astringents, had applied the galvanocautery to the ulcers, and had prescribed some systemic tonic mixture. No benefit had resulted after several weeks of this treatment. (This fact should have put me especially on my guard against syphilis.)

In a more or less casual way I considered the possibility of syphilis, looked the patient over for other evidences in the cursory manner of routine, and asked directly concerning a history of syphilis. The results were negative. The patient appeared above suspicion, and I proceeded on other theories. After a few days of unavailing treatment with local measures, I performed an inferior turbinectomy on the left side. The other structures, then becoming visible, appeared normal. Within a week or so a well-marked proliferating process commenced about the middle of the turbinate stump. On its continued growth I snared this off a few days later.

The patient then complained of his mouth and teeth feeling uncomfortable, though not painful. Examining the roof of the mouth, I found the arch of the hard palate about one-fourth filled with a smooth, hard, rounded oval mass, not at all sensitive, and presenting three or four superficial ulcers of apparently precisely the same character as those which appeared in the nose, and which had never shown the slightest improvement under local treatment up to this time. Still, I remained "asleep at the switch," and for a few days tried to reason out the pros and cons of a probable neoplasm, and was about to make a section for microscopic examination, when I awoke with a sudden and sickening thud. The rest of the story is briefly told. Mercury protoiodid and potassium iodid solved the problem that had baffled me for several weeks. The ulcers healed as if by magic; the thickened tissues resumed their normal condition; the distress of mind and body which had afflicted the patient disappeared, and he grew stout, well and happy. I had been dealing all the time with late secondary manifestations of syphilis, but I feel that I had at least some slight shadow of excuse for my tardy diagnosis.

Alas, that we cannot all comply with the gentle and epigrammatic admonition of the eminent Dr. Osler: "Know syphilis in all its manifestations, and what remains to be learned will not stretch the pia mater of a megalocephalic senior student."

INOCULATIONS OF NASAL SECRETION FROM PATIENTS WITH ACUTE POLIOMYELITIS *

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The assumption that acute poliomyelitis is a contagious disease is founded partly on experimental research. Flexner and Lewis were the first to call attention to the presence of the virus in the nasopharyngeal mucosa of monkeys ill with the disease, and that monkeys could be infected when the virus was applied to the scarified nasal mucosa. Leiner and von Wiesner found that successful inoculation resulted when the virus was smeared on the intact nasal mucous membrane. Recently Osgood and Lucas have reported the important fact that the virus can be present in the nasal mucosa of monkeys as late as five and one-half months after the acute stage of the illness. Landsteiner and Levaditi, in their last report, criticized the hypothesis of nasal contagion advanced by Flexner and Lewis, in that they had overlooked the determination of the presence of the virus in the nasopharyngeal mucus. They inoculated a macacus with the nasal secretion obtained from a monkey ill with poliomyelitis, but with negative result. They were also unsuccessful in inoculating a monkey with secretion which they had obtained from two men, one of whom had been ill some weeks, the other some months previously.

It occurred to me also that the virus ought to be present in the nasal mucus and, therefore, in August of last

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* From the Department of Pathology, Cornell Medical College.

year I made inoculations which, though unsuccessful, have a certain value in solving this question of contagion. The material consisted of ten cases; seven occurred during the epidemic at Springfield, Mass.,[1] one in the small epidemic at Lake Placid in the Adirondacks, one in Manhattan, and the tenth in Brooklyn. The mucus was obtained by passing dry cotton swabs into the nasopharynx through the mouth. When removed they always had considerable mucus attached to them and in two instances they were a little blood-streaked, thus showing that they had come into intimate contact with the mucosa. After inoculation the swabs were placed into 10 c.c. of either normal saline solution or bouillon and kept either at room temperature in the dark or on ice. The solution was expressed from the swabs in order to remove as much of the virus as possible, and filtered through either Berkefeld or Chamberland filters. The virus is known to pass either of these filters. The filtrate was then centrifuged and either 2 or 4 c.c. were injected intracerebrally into rhesus monkeys.

TABLE OF INTRACEREBRAL INOCULATIONS OF RHESUS MONKEYS WITH NASOPHARYNGEAL SECRETIONS FROM PATIENTS WITH POLIOMYELITIS

Case.	Age, Years.	Onset of Disease.	Swab Taken.	Temp. When Swab Taken.	Clinical History.	Intracerebral Inoculation in Monkeys.
1	25......	8/6	8/13	....	Onset with T. 101 F. Severe headache, rigidity of neck. Aug. 7, facial palsy (nuclear) and palsy of right ext. rectus.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
2	1¼....	8/7	8/11	During febrile stage.	Began with fever, vomiting and diarrhea. Aug. 10, T. 102 F.; unable to move arms or legs; stuporous; Aug. 11 had fever, but was brighter. Paralysis continued.	Swab kept 19 hours in bouillon. Berkefeld filter; 2 c.c. inoculated.
3	1¾....	8/8	8/13	3 days after fever.	T. 100.8 F. at onset. Aug. 9, T. 102 F. Aug. 10, facial paralysis. Aug. 11, normal temperature.	Swab kept 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
4	5......	8/8	8/13	2 days after fever.	Began with T. 102 F., rigidity of neck, paralysis of both arms. Aug. 10, T. 101.6 F. Aug. 13, T. normal; left leg paralyzed.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
5	18......	8/8	8/13	102 F.	At first headache, retraction of head, rigidity of neck, painful joints, delirium. T. 102 F. Left leg paretic. Angina.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
6	5......	8/11	8/13	No fever on day of paralysis.	Malaise for one week; fever Aug. 11. Paralysis of right leg Aug. 13.	Swab kept 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
7	62.....	8/31	9/4	After death.	Began Aug. 31. T. 101 F. Paralysis of both arms and legs developed Sept. 1. Died Sept. 4, of respiratory paralysis.	Swab kept in bouillon in ice-box for 5 days. Berkefeld filter; 5 c.c. inoculated.
8	1......	8/16	8/17	24 hours after fever.	Paralysis of deltoid.	Swab kept in bouillon 5 hours. Berkefeld filter; 2 c.c. inoculated.
9	15......	9/12	9/19	102.6 F.	Began with headache, pains in legs, fever. Sept. 13, legs paralyzed. Sept. 14, arms paralyzed; rigidity of neck; high fever. Sept 19, T. 102.6 F.	Swab kept in bouillon 2 hours. Berkefeld filter; 4 c.c. inoculated.
10	2......	9/18	9/28	24 hours after fever.	Onset with fever, vomiting; arm and leg paralyzed three days later. Then swallowing was difficult. Sept. 27, T. 102.4 F.	Swab kept in salt solution 4 hours. Berkefeld filter; 4 c.c. inoculated.

The virus did not have to be present in large quantities, since Leiner and van Wiesner had shown that a cord emulsion of 1 to 1,000 or 1 to 500 strength is more potent than stronger emulsions.

The accompanying table gives the data of the inoculations. No monkey became ill as a result of these inoculations. The experiments, therefore, seem to indicate the absence of the virus in the nasal mucus. This, of course, does not mean that it may not sometime be found in the human nasal mucosa as an excretion, just as is the case in the monkey, but if we are to regard the nasopharynx as the source of the contagion we ought to be able to demonstrate the presence of the virus in the nasal mucus.

One experiment was made to isolate the virus from the feces of a patient with an acute case. The feces of Patient 9 were mixed with salt solution on the same day that the nasal swab was taken. The mixture was filtered through a Berkefeld filter and the filtrate centrifuged. Four c.c. of the sedimented portion were injected intracerebrally into a monkey. The animal died of marasmus after four weeks. The autopsy revealed no cause of death. An emulsion of his brain and cord was inoculated into a second monkey with negative result. This experiment, so far as we are aware, is the only one in which an attempt has been made to demonstrate the virus in the human feces.

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[1] I wish to express my thanks to State Inspector Boyd and Drs. Emerson, Tracy, Hirsch and Rearden of Springfield for their kind assistance.

THE ETIOLOGY OF VERRUCA

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It may be assumed as true that a simple traumatism can give rise to a wart, but in order to do so the injured tissues must themselves be in a favorable condition to react in this pecular way to the traumatism. The injury, therefore, would be the provocative cause of the verruca, and the condition of the tissues the predisposing cause. Verruca or papilloma is primarily an epithelial growth, and only secondarily is the subjacent connective tissue affected. Moist heat, inducing maceration of the epithelial cells, is one of the most important of predisposing causes of the neoplasm, and acts probably by exciting epithelial cells to grow more luxuriantly, and particularly so when a traumatism draws an increased supply of blood to the part. The frequency of papilloma of the sole in the flat-footed is an example of this.

My attention was first drawn to this by Dr. W. A. Hardaway of St. Louis. These patients almost always suffer from hyperidrosis of the feet, and the consequent maceration of the epithelium of the sole constitutes the predisposing tendency to the formation of papilloma in this region. Nature seldom afflicts us with one thing at a time; she diversifies our torments. The arch of the foot breaks down, we get hyperidrosis, and then that most painful affliction, papilloma of the sole, appears. In this way we finally become intimately acquainted with grief.

But maceration of the epithelial cells, predisposing them to this peculiar form of neoplasm may, I am convinced, be caused by hot water alone, of which the following is an instance:

About July 4, 1905, a man came to me with a painful swelling under the ball of the right foot, which was quickly seen to be a verruca. There was the usual circumscribed callus with the bunch of dots in the center representing the upgrowing connective tissue filaments. A strong salicylic acid ointment was ordered to be applied to the sole each morning, so that in walking he would tramp it well in during the day. When the wart was laid bare of its surrounding mass of epithelial cells, it was burnt with silver nitrate, but others came, and in great numbers.

In casting about for the reason of this persistence of the affection, I told the patient of Dr. Hardaway's observation in regard to the association of flat-foot and papilloma of the sole, and explained that probably flat-foot was only an incident in the etiology, and that the essential feature in all likelihood was the hyperidrosis. He shortly afterward related to me a most interesting story. In the hotel where he boarded there was an abundance of hot water, and every night he used to soak his feet in this for no other reason than that the heat gave him pleasure. One evening on returning to his rooms he found he had mislaid his key, and the servant with the pass-key was not in sight. The patient, being athletic, entered through the transom and jumped to the floor. He lit on the ball of his right foot, and remembered that it stung quite severely. Shortly afterward his trouble appeared and on the site of this very traumatism.

A few days after this explanation, the great fire occurred, and threw the patient and his physician both out on the street. He had some fire insurance in one of the companies that tried to evade or shave all its policies; the city had no street-car service or other means of public conveyance, and all the work of getting proof of loss properly presented had to be done on foot. In addition to this he had to hunt for me. In this interesting interval the papilloma of the sole did not neglect to torment him. After he had found me I had my troubles, for I wished to curette the wart, and as all the surgical instrument stocks had been destroyed in the catastrophe, it was difficult to find a suitable tool. Finally by thorough curetting under cocain and cauterization with nitrate of silver, the papillomas were eradicated with no subsequent return.

The hot-water bathing, I have no doubt, had much to do with the occurrence of warts in this case.

An active proliferation of the epithelial cells favors the occurrence of verrucæ, and this is probably why they so frequently occur in youth, when all the cells of the body are in very active growth. In seborrhea also the epithelial cells, both of the skin and of the mucous membranes, proliferate with unusual activity, and both verrucæ and paillomas are apt to appear. Verrucæ of the scalp, for example, are frequently associated with seborrhea of the scalp.

In seborrhea, moreover, there is not alone a more active proliferation of cells from the very fact of the existence of seborrhea, but those having seborrhea sweat more easily and profusely, so that they have a double predisposition toward papilloma or verruca.

A traumatism alone, however, I am convinced may give rise to these troublesome growths, and it is not strange that it should [illegible] so, for if injury causes a continuously increased supply of nourishment to a part it may cause increased cell proliferation through over-nourishment, and hence may predispose to papilloma.

323 Geary Street.

A SIMPLE APPARATUS FOR THE INTRAVENOUS INJECTION OF SALVARSAN OR OTHER DRUGS

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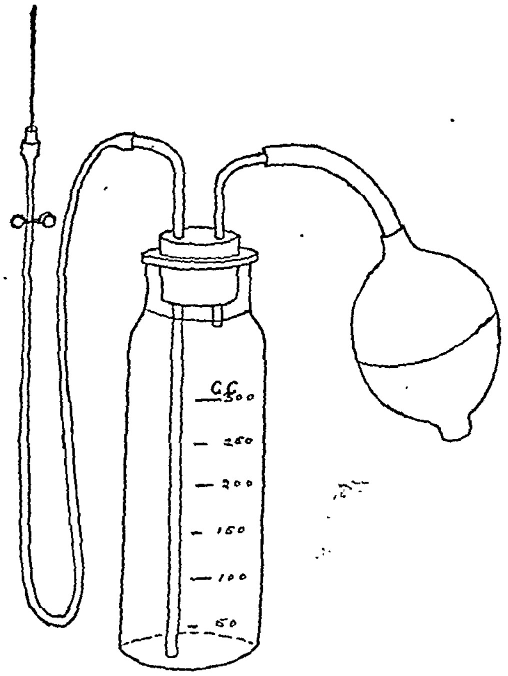
CHICAGO

The nearly universal recommendation of the intravenous use of salvarsan has brought up the question of which is the most convenient and best contrivance for the administration of this drug. A large glass syringe is probably the simplest appliance for giving the injection; however, it is not always possible to get a syringe which will hold 300 c.c. If it is administered by gravity, it is essential for the operator to have an assistant. The apparatus which I am going to describe can be constructed at a small cost, answers the purpose in every respect and can easily be operated by the physician alone. The materials required are:



Apparatus for intravenous injections by means of a pressure-bottle.

Wide-mouth bottle, capacity 360 c.c. (12 oz.).
Rubber stopper to fit the bottle, two perforations in stopper.
Two glass tubes to fit perforations, one sufficiently long to reach to the bottom of the bottle, the other to reach through the stopper.
A double-valved atomizer bulb.
Twelve to eighteen inches of India rubber tubing to fit glass tubing.
Hypodermic needle, platinum.
Clamp for tubing.
Glass funnel and filter-paper.
Glass-stoppered bottle (360 c.c.) and 50 to 100 glass beads.

The salvarsan is dissolved and mixed in the glass-stoppered bottle according to directions accompanying each package of the drug. After the solution is properly prepared it is filtered into the reservoir of the apparatus. While waiting for the solution to filter, the reservoir is placed in a bowl of hot water so that by the time the filtration is completed the solution is of a proper temperature for immediate use. If desired, the salvarsan can be prepared in the reservoir of the apparatus and if a fine piece of muslin is tied over the lower end of the long tube, the solution can be filtered simultaneously with the injection. After the reservoir is filled, the rubber stopper, with the glass tubes inserted, is tied tightly into place. The needle and hose are elevated, the bulb is pressed and all air is expelled. As soon as the liquid spurts through the needle in a solid stream the hose is clamped and the needle is inserted into the vein of the patient. When it is certain that the needle is in the proper position the clamp is loosened and by pressure on the bulb the fluid is readily forced into the circulation.

According to the air-pressure used, the 300 c.c. of solution can be injected in from four minutes to as long a time as may be deemed advisable. When the solution is all utilized the air slowly follows the fluid up the long glass tube, giving the operator plenty of time to close the clamp before any air can enter the veins. The needle is then withdrawn and the puncture wound sterilized and closed with the tincture of iodin.

The compactness of this apparatus permits of but little loss of heat by radiation and the giving of an injection is under the full control of one individual.

42 Madison Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

PRE-DIGESTED LIQUID FOOD. Mulford.—Pre-digested Liquid Food, Mulford, contains 10 per cent. of protein and 10.5 per cent. of carbohydrates (dextrose, lactose and sucrose) in a vehicle containing glycerin about 1½ per cent., saccharin about .01 per cent. (1/20 grain in a fluidounce) and about 30 per cent. of native wines, fortified with alcohol sufficient to bring the alcohol content up to 16 per cent. absolute alcohol per volume.

Pre-Digested Liquid Food, Mulford, is prepared by digesting fresh lean beef with hydrochloric acid and pepsin and digesting milk casein first with hydrochloric acid and pepsin and after neutralization with pancreatin. The solutions after digestion are concentrated in vacuo and mixed with the other ingredients.

It is a light yellowish-red liquid, having an aromatic odor and not unpleasant taste. Its specific gravity is about 1.07. When evaporated to constant weight it leaves about 25 per cent. of residue.

Actions and Uses.—See Medicinal Foods.

The nutritive value of 500 Gm. corresponds to 416.3 calories, of which 201 are due to protein and 215.3 to carbohydrates. The same quantity of milk represents 360 calories, of which 84 are due to protein, 98.4 to carbohydrates and the rest to fats.

Manufactured by H. K. Mulford Co., Philadelphia. (Not patented or trademarked.)

ANTIRABIC VACCINE

The American Biologic Company, Kansas City, Mo.

Pasteur Antirabic Vaccine.—The virus is prepared according to the method of the Hygienic Laboratory, Washington, D. C. An amount of the dried cord, sufficient for one dose, is suspended in a mixture of 66⅔ per cent. glycerin and 33⅓ per cent. of physiologic salt solution, and sent daily by mail, accompanied by a syringe containing sterile physiologic salt solution for further dilution at the time of administration. The treatment requires 18 to 21 days.

ARTICLES ACCEPTED FOR N. N. R. APPENDIX

Borcherdt Malt Extract Co., Chicago.

Borcherdt's Malt Extract Plain.—A preparation essentially equivalent to Extractum Malti U. S. P. and containing 10 per cent. of glycerin. U. S. Trademark Nos. 64,467, 64,481.

Borcherdt's Malt Olive with Hypophosphites.—Each 100 c.c. is said to contain Borcherdt's Malt Extract 70 c.c., California olive oil 20 c.c., C. P. glycerin 10 c.c., calcium hypophosphite 0.64 gm. (3 grains in a fluidounce), sodium hypophosphite 0.64 gm. (3 grains in a fluidounce). U. S. Trademark Nos. 60,422, 64,467.

Borcherdt's Malt Soup Extract.—Borcherdt's Malt Soup Extract is a mixture obtained by adding potassium carbonate 1.1 gm. to each 100 gm. of Borcherdt's Malt Extract, diluted with one-half its volume of distilled water, and evaporating in vacuo to a specific gravity of 141. U. S. Trademark No. 64,467.

Therapeutics

PREVENTION OF PULMONARY TUBERCULOSIS

POINTS WHICH MUST NOT BE FORGOTTEN

The announcement by Dr. Robert Koch, in 1882, of his discovery of the tubercle bacillus and its relation to tuberculosis opened a new era in the study and management of that disease. He proved conclusively that the tubercle bacillus is the cause of tuberculosis, and opened the way to the modern treatment of the disease. Tuberculosis does not occur in the absence of the tubercle bacillus, and the recognition of this fact has greatly simplified the problem with which the medical profession had been struggling almost hopelessly for centuries.

It is now generally recognized that the most common method of transmission of this terrible disease from one individual to another is by the transference of the tubercle bacillus from the sick person to his neighbor by means of the secretions or exudations from the lungs, and from the upper respiratory organs where the tubercle bacillus may be lodged on the mucous membranes and in the mucus and other secretions of those membranes. This makes manifest the great importance of a suitable disposal of the matter expelled from the nose and mouth. It has been found that not only do the masses of sputum of considerable size which are expelled from the lungs contain tubercle bacilli, but also that the smaller particles of moisture and mucus which are expelled in such small quantities as to be almost unrecognizable, in many instances also contain the dreaded bacillus. These small particles, or droplets as they are commonly called, are expelled usually with the so-called "dry cough" which is not accompanied by the expulsion of the larger masses of sputum. The problem, then, is to receive and take care of the matter expelled from the mouth and nose of the tuberculous patient, whether this comes from the lungs, throat, nose or mouth.

Various devices have been provided for collecting and destroying the larger masses of sputum. In the room where the sick person spends most of his time, a metallic cuspidor with an easily opened cover is very useful. This cuspidor should contain water, preferably rendered antiseptic by the additon of a 5 per cent. solution of phenol (carbolic acid). This cuspidor should be large enough for the patient to deposit the sputum in it easily. Other forms of receptacle include a tin cup in which is placed a pasteboard box into which the patient expectorates. For patients who are walking about, a small cup with a removable cover is convenient. This should be made so that even when it is tipped over the sputum will not escape. When it is impracticable to use any of these special receptacles, the sputum may be received on pieces of cloth or on paper napkins. It is necessary that the patient should be provided with a receptacle for these things which is impervious to moisture and which will not allow the sputum to penetrate to the exterior of it, and which may be thoroughly cleansed and disinfected when the pieces of cloth or paper are removed from it. The use of gauze is recommended by many writers, but is less desirable than paper or pieces of cloth, because of the danger that the sputum will penetrate the meshes and extend the infection. Whatever the substance used, it may be deposited in a convenient stiff paper bag, and the bag, later, with its contents, burned. The water and sputum in the cuspidors, after disinfection, should be thrown into the water closet.

All papers and cloths on which sputum has been deposited should be burned. In many homes, under the modern conditions of heating and cooking with gas stoves, difficulty may sometimes be found in accomplishing this, but the importance of destroying paper or cloth contaminated with tubercle bacilli is so great that the difficulty should not be regarded as an adequate excuse for failure to effect perfect destruction by incineration.

Even outside of the house or on the street, the same care should be exercised in collecting and destroying the sputum. Boards of health and municipalities have exercised themselves to prevent the spread of the disease in this way to the extent of passing ordinances forbidding spitting on the sidewalk. Such ordinances are not enforced so thoroughly as they should be, but for the tuberculous patient spitting in the gutter is objectionable, and should not be encouraged. In fact, if all spitting, except into some suitable receptacle or some substance which could be destroyed, were forbidden, the condition of the world, and especially of the larger cities, would be greatly improved. Certainly, everyone should be taught, even from childhood, that spitting is inelegant, and that no one should cough, either in public or private, without holding before his mouth some paper or cloth so as to receive on it any matter which may be expelled, even involuntarily, from the mouth or nose.

In the same way, the discharges from the nose of the tuberculous patient should be received on paper or cloth which can be destroyed. If occasionally the ordinary handkerchief is used to receive the discharges from the mouth or nose, this should be placed in water before the discharge is allowed to dry, and should be boiled before being placed with the other soiled clothing for the usual family laundry.

It is impossible to emphasize too strongly the necessity of the most minute care to prevent the dissemination of the discharges from the lungs, nose, throat and mouth of the tuberculous patient. When, either from accident or carelessness, these discharges are not properly cared for, but are allowed to fall on the floor or street, as they become dry, the tubercle bacilli are, so to speak, set free in the dust, and are liable to become a source of danger to healthy people. This suggests the importance of using every possible measure to prevent the dissemination of dust in apartments or on streets where many people are accustomed to go. The feather duster, so dear to the average housewife for removing dust from furniture and bricabrac, should never be allowed inside the residence of a civilized citizen. Ordinary sweeping with a broom should not be allowed unless special precaution has been taken to prevent the raising of dust. It has been recommended for this purpose that a newspaper be dampened, torn into pieces, and thrown upon the carpet before the broom is used. Where there is no carpet on the floor, moist sawdust is useful to prevent the raising of dust. Far better than the broom for the remov of dust and dirt from rooms is the vacuum cleaner. It is greatly to be hoped that it will not be long before the broom will be a forgotten implement of cleansing and superseded entirely by the vacuum cleaner.

In the streets of cities the dust which is raised by the wind or by vehicles is frequently germ laden, not only with the bacilli of tuberculosis, but with other disease germs, especially those of influenza and pneumonia. Hence the importance of street cleaning and of street watering, the former diminishing the amount of dust liable to be raised by the wind or vehicles, and the latter preventing whatever there may be from being blown about.

These are the most important considerations to be borne in mind in preventing the transmission of the disease from the patient to those who come into the neighborhood or the region where he is or has been. There is another point of view to be taken into consideration, and that is increasing the resistance of feeble people against the attack of the tubercle bacillus. It would be impossible, perhaps, to prove that no child has ever been born infected with tuberculosis from its parents before birth. In fact, it is generally conceded by authorities on the subject that such antenatal infection is possible, but practically it certainly is very rare. That tuberculosis is hereditary in the sense in which that statement would have been understood previous to thirty years ago is recognized now as being impossible. On the other hand, that many children born of parents, one or the other of whom has suffered from or has died of tuberculosis, are more likely than the children of healthy parents to suffer from tuberculosis is recognized by everyone. But the interpretation of this observation which now prevails is that the child does not inherit the disease, tuberculosis, but that he inherits a predisposition to that disease, that he inherits a weakness of physique which renders him more liable to be attacked by the disease than others who do not inherit such weakness. One of the most important problems to-day in regard to the prevention of pulmonary tuberculosis is to raise the vitality and resisting power of these individuals so that they will not easily become affected by the tubercle bacillus. For at present it is recognized that this bacillus is so generally disseminated throughout the places occupied by the human family, that many people become the hosts of the bacillus without knowing it, and if their resistance is sufficiently strong, do not suffer any ill effects from it, but cast it off.

It is now well understood that the diet of patients with a tuberculous tendency must be nutritious, but it is frequently necessary to express a caution against the use of alcoholic drinks. Many people believe that these beverages are a valuable tonic, increasing the appetite and improving the digestion and general nutrition, and therefore believe that they are useful for people who seem to have a predisposition to tuberculosis. As a general rule, it may be stated that this belief is a mistaken one, and that in the absence of any special indication for their use most individuals, even if they are not robust, are better off without the habitual use of alcoholic stimulants.

In order to raise the resisting power of children with tuberculous parents, so that they may not readily contract the disease, many things must be taken into account. Perhaps the most important of all is the question of pure, fresh air. This at once brings up the question of residence. Families, any member of which is recognized as being weak or having under-average resisting power, should consider carefully the selection of a place of residence. They should not select a tenement house in a crowded city, but should, if possible, secure a residence in the country suitable for a single family and surrounded by air on all sides, and in which every room has a direct supply of fresh air and sunshine. The house should be built preferably on elevated ground, and on gravel or sandy soil. Low ground or clay ground should be avoided. Of course the residence should be selected not only with reference to fresh, pure air, but with reference to the facility of reaching the work in which the members of the family are occupied. This entails transportation facilities, which are of great importance. But not all people can live in the country where they can occupy separate houses. If a family embracing feeble members is obliged to live in the city, a residence should be found in the less thickly populated part of the town. These people should avoid tenements which have dark rooms, rooms in which there are no windows toward the outside of the house through which fresh air and sunshine may be admitted. In recognition of this fact, when cities are laid out the streets should be made broad, and the height of the houses should be limited in order that through narrowness of the streets and height of the adjacent buildings the air and sunshine may not be practically prohibited from the dwellers.

The manner of living within the house is also important. Rooms which have not windows opening directly out-of-doors should not be used for bedrooms. It is preferable that no bedroom should be occupied by more than two persons, and it is very desirable that each individual should have a separate bed. The windows should be kept open at night so that the occupants may constantly have fresh air to breathe. Infants require fresh air quite as much as adults, but they are less able to stand inclement weather or cold air than older children, and they should be gradually accustomed to the breathing of, and exposure to, cold air. It is of course necessary, in the matter of fresh air and cold air, to use common sense, as in all other matters pertaining to the health of individuals. The window through which fresh air is admitted should not necessarily be opened equally widely at all times; or if it is, varying degrees of protection against the incoming air may need to be employed at different times. For instance, if a strong, cold wind is blowing in the window at the hour of retiring, the window should either be partly closed, or a screen or curtain or blind should be placed in front of it to break the draught; otherwise, the sleeper will be very apt to awaken in the morning with a coryza.

Delicate children should not be sent to school too young, or confined in the schoolroom for many consecutive hours. They should be encouraged to remain out-of-doors, and to engage in active, but not too violent play. They should have longer hours of sleep than strong, robust children. For children from five to ten years of age, ten hours of sleep are none too many.

Breathing exercises should early be taught to all children, and especially to weak children, so as to increase the breathing power and promote the development and expansion of the chest.

Another consideration of great importance is the matter of food. Weak children should be fed regularly. Their food should be varied, nutritious, and easily digestible. Milk should be an important article of diet for every feeble child. Eggs are also useful, but should not be offered so frequently that the child will acquire a distaste for them. While sugar is a necessary ingredient of the diet of every growing person, yet it should not be provided for children in excess, especially in the form of pie, cake and candy. Children should be taught to eat fruit and vegetables, and a limited amount of meat. It is exceedingly important that they should be brought up and taught to eat fatty substances, such as butter, cream, and the fat of meat. This will do much to promote their nutrition and to increase their resisting power against disease.

With reference to providing abundance of fresh air for growing children as an aid in the prophylaxis of pulmonary tuberculosis, it is always necessary to examine the upper respiratory passages of the child in order to determine whether there is ready access of air to the lungs. Often it will be found that a deviated nasal septum, hypertrophied turbinates, nasal polypi, or adenoids in the vault of the pharynx interfere seriously with nasal respiration. Also, hypertrophied tonsils interfere with the taking in of an adequate supply of air. These conditions should all be looked for, and, when found, should be remedied by appropriate medicinal or operative treatment.

With reference further to the obtaining of an adequate supply of fresh air, the dress of the patient, especially if a girl or woman, should be carefully considered. High collars, or very tight collars about the neck interfere decidedly with respiration, and should be forbidden. The wearing of corsets too tightly laced about the waist interferes with abdominal respiration, and frequently produces displacement of the abdominal viscera and deformity of the bones of the thorax.

While the clothing should be sufficiently warm to protect the skin from changes in temperature and from draughts, it should at the same time be loose enough to form no obstacle to free respiration.

INTESTINAL WORMS—A CORRECTION

In The Journal, March 18, 1911, page 813, under the discussion of *Ascaris lumbricoides*, the statement was made that this worm lives in the intestines of cattle and pigs, and may reach man by their excrement contaminating water and vegetables. The statement was incorrect. The ascaris of the pig is different from that infecting man, and cattle do not seem to have this disease; hence the contamination of water and vegetables with the eggs of the *Ascaris lumbricoides* that infects man comes from infected human excrement used as a fertilizer, or by the direct contamination of water.

Massage of the Prostate.—Before one undertakes to massage the prostate, he must bear in mind the object sought, *viz.*, to improve the circulation and thereby aid absorption of the infiltrate, and secondly, to express any macroscopic pus (abscess). It is more important to bear the first indication in mind and execute the massage gently, than to do it too vigorously. The procedure should cause little or no pain to the patient, should be kept up for about five minutes, and should not be repeated oftener than twice a week, but the main reliance should not be put on massage alone. The periprostatic tissues should be gently massaged as well. The prostate can be made more accessible by making counterpressure over the symphysis pubis with the disengaged hand. The prostatic circulation can be more powerfully influenced by the prostatic vibrator, which is even less painful than the finger massage. When there exists a great deal of interstitial prostatitis, as evidenced by a nodular prostate, the massages do not influence the prostate, as we cannot hope for any absorption of organized connective tissue.—G. Greenberg, in *American Journal of Urology*.

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[*For other information see second page following reading matter*]

SATURDAY, APRIL 22, 1911

STANDARDIZATION OF DIGITALIS

One of the greatest handicaps to exact drug therapeutics is the fact that "impressions" either of the physician or of the patient play such an important part. Many other branches of medicine have been put on a truly scientific basis as a result of careful quantitative work, in either the laboratory or the clinic, or in both, but in drug therapeutics, such expressions as "the drug seemed to do good," are constantly used without the slightest attempt to measure any tangible effect, or to compare the case under treatment with one running a natural course. It is this habit of reliance on impressions which led physicians, fully as wise as any now living, to use for centuries drugs now entirely discarded; and it is this habit which keeps the modern pharmacopeias overburdened with equally useless drugs. It is rather surprising, however, to see what an important part "impressions" play even in the choice of a drug and the method of its preparation, for these would seem to be amenable to exact laboratory control. That such is the case however, is strikingly illustrated in a recent publication of Hale[1] on digitalis.

Hale has endeavored to trace the origin of a number of commonly accepted views concerning this invaluable drug and to test them experimentally in the laboratory. Some of his conclusions may be summarized as follows: The view that the leaves of the second year's growth are more potent than those of the first year—a view adopted by most pharmacopeias and by the Brussels conference—seems to be founded on tradition only. The only experimental work done had shown that the first-year leaves were fully as active as those of the second year; Hale, experimenting with four lots of first-year leaves, found them to be from 28 to 40 per cent. more active than the best second-year leaves obtainable. The view; or rather impression, that the leaves of wild-growing plants are more potent than those of cultivated plants—a view which finds expression in the French, German and some other pharmacopeias—is also shown not to rest on a scientific basis. Hale admits that some wild-growing leaves are more potent than some garden-grown leaves, but believes that cultivation *per se* has nothing to do with it, and points out that Allen's English leaves, which give high assay values, are garden-grown. He also discusses the influence of moisture and of heat on the keeping quality of leaves; he found that an amount of moisture sufficient to permit molding might cause a loss of potency of 90 per cent. in a few months, but found no justification for the statements sometimes made in the interests of special preparations that leaves dried in a vacuum, or preparations made by macerating leaves with cold water, have special advantages. Although these experiments should extend over a number of years before a final decision is reached, as far as they go they indicate plainly that physicians and pharmacists for decades have been groping in the dark after the causes of the well-known variation in the potency of digitalis leaves, and have often attributed it to irrelevant circumstances. The real cause is unknown, but seems to be connected with the nature of the soil, the character of the season, etc.; it is only by the use of physiologic standardization that uniformly active leaves can be obtained at present.

Of the galenical preparations of digitalis, Hale never found the fluidextracts to assay, relatively, as strong as the tinctures; this indicated incomplete extraction. The practice (one much encouraged by certain drug houses) of preparing pseudotinctures by diluting the fluidextracts is condemned; such "tinctures" have as a rule but from one-half to two-thirds the strength of genuine tinctures. It was found that whereas weak alcohol (35 per cent.) was as efficient as stronger alcohol in extracting the leaves, preparations made with the stronger alcohol had the advantages of containing less inert matter and of retaining their potency much better. A number of official extracts showed little deterioration (from 4 to 8 per cent.) in twenty-two months, whereas a number of proprietary preparations containing a smaller percentage of alcohol had deteriorated to a much greater degree (even to 33.3 per cent.) in the same period. Hale suggests that the makers of special preparations should submit them to much more rigorous tests than is done at present, and that physicians should use them as seldom as possible unless assured, by a system of dating, of their very recent preparation. The importance of this precaution was shown by the fact that one sample of a widely used proprietary preparation, secured from a reliable pharmacy, had lost practically all digitalis action and had become a cardiac depressant. Hale believes that the manufacture of special digitalis preparations should not be encouraged.

The second part of the bulletin deals with special digitalis preparations, such as tablet triturates, hypodermic tablets, fluid glycerates, etc. Tablet triturates obtained from different manufacturers were found to vary in strength by as much as 360 per cent., about the degree of variation found in official tinctures and fluidextracts. Hypodermic tablets of digitalin were also found to vary by as much as 230 per cent. The fluid glycerate was found to have but about 40 per cent. of the strength of the official fluidextract.

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[1] Bull. 74, Hyg. Lab. P. H. and M.-H. S., Washington, D. C.

The bulletin closes with a discussion of two widely advertised proprietary preparations, digalen and digipuratum, embodying conclusions previously published.[2]

A perusal of this bulletin will place the practitioner in a much better position to form a judgment of the character of the digitalis preparation he uses. The work which it embodies should be of value in improving the pharmacopeial requirements of this important drug.

TWO SURGICAL PATRIARCHS

Detailed sketches of the lives of two men who were prominent in the surgery of the latter half of the nineteenth century in America have recently appeared; and teachers of medicine, as well as those who are interested in medical history, will find them storehouses of valuable material.

The recently published memoirs of Dr. Thomas Addis Emmet[3] are full of striking features illustrative of the medical professional life of the latter half of the nineteenth century in America, and reflecting the varied interests in life of a man who, though nearly 84 years of age, still retains the full vigor of his intellectual faculties. Dr. Emmet's is one of the comparatively few American names—and one of the earliest—that was well known in European medical circles practically half a century ago. Some of his work was that of a pioneer in the best sense of the word; it influenced the American medical profession widely, and yet was so thoroughly practical that it is still influencing us. It may be readily understood, therefore, how much such a volume from his pen means. Dr. Emmet's recollections are linked with many of the most important incidents in our medical history. For instance, he went through two awful epidemics of typhus fever with the Irish immigrants on Ward's Island in the early fifties. During the cholera epidemic of 1854, on two occasions, on making his visit to the immigrant hospital he found that all the patients and nurses in his ward had died of the disease since his previous visit. The relations of Emmet and Sims are also interesting; likewise the story of the origin of the Woman's Hospital and of the Cancer Hospital, now called the Memorial Hospital in New York.

One of Dr. Emmet's hobbies was the collection of documents relating to American history. He was one of the first in the field to gather autograph material, and he succeeded in making a collection unequaled of its kind. This is now in the Lenox Library, New York, bearing the name of the Kennedy-Emmet collection. Among autograph collectors, Dr. Emmet's name is known all over the world, while among American historians his work is considered most important for the saving of valuable material which would certainly have been lost but for his interest in it. It is probable that Dr. Emmet spent nearly a quarter of a million dollars in the making of this collection, which is now invaluable.

A sketch of the life of Sir William Hingston, a prominent surgeon and notable citizen of Montreal, who died four years ago, in his seventy-eighth year, appeared in the January number of the *American Catholic Quarterly*. Like Dr. Emmet, Sir William Hingston was a self-made man. He was the son of a widow in straitened circumstances, and carried on his medical studies while acting as assistant in a drugstore. Yet he succeeded in doing fine work in his subsequent career and attracted the attention of the conservative English-speaking profession, so that more than twenty-five years before his death he was asked to deliver the annual address on surgery before the British Medical Association. At its meeting in Canada, he was one of the honorary presidents and one of those selected for a knighthood on the occasion of Queen Victoria's jubilee. He served two successful terms as mayor of Montreal, became a life senator of Canada, and when he died a session of the Canadian senate was taken up with tributes to this member, who had begun life under such discouraging circumstances.

In Sir William's career there is abundant encouragement for the man who has to contend against difficulties in obtaining a professional training. The story of his two years in Europe just after graduation, when on less than $500 he succeeded in spending prolonged periods in Edinburgh, London, Paris and some of the German cities, getting in touch with the best surgeons in Europe and coming home thoroughly prepared to do good work, is of itself a typical example of his power to overcome what would seem to a less indomitable character impossible obstacles. But his efforts at self-education did not stop there. He became one of the busiest of Montreal's practitioners, occupied mainly with the poor; yet he succeeded in piecing out the fragments of a classical education that he had obtained in a single year at college into a fine classical scholarship. He knew French and German well, and had a thorough command of English, being both an effective orator and a ready writer.

Above all, he showed clearly that it is possible to combine the career of a successful, busy surgeon with that of a citizen who sees and performs his duty to the community. The lives of such men as Emmet and Hingston must prove a stimulus to high professional work and a deep sense of patriotic duty.

ANAPHYLAXIS

In a recent article, Friedberger[1] has reviewed our present knowledge of the subject of anaphylaxis. As a result of the great amount of work devoted to this phase of immunization, both in this country and abroad, it is now better understood, and is even being invoked to explain other more obscure phenomena of disease. According to our present conception, the process of anaphylaxis is in brief as follows: On the introduction of the first dose of a foreign proteid into an animal, there occurs a gradual increase of the antibodies for this substance—antibodies already present in small amounts normally. If, now, after a suitable interval, say from eight to ten days, a second dose be given, these antibodies, now present in increased quantities, produce a rapid disintegration of the proteid, with liberation of toxic products. If the animal survives this sudden liberation of poisonous material, farther cleavage of these products rapidly renders them innocuous.

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[2] Hale, Worth: A Comparative Study of Digalen, The Journal A. M. A., Jan. 1, 1910, p. 35; The Comparative Strength of Digipuratum, Jan. 8, 1910, p. 129.

[3] Emmet, Thomas Addis: Incidents of My Life, Professional, Literary, Social, with Services in the Cause of Ireland, G. P. Putnam's Sons, New York, 1910.

[1] Friedberger: Deutsch. med. Wchnschr., 1911, xxxvii, 481.

Such a hypersensitization to foreign proteids is peculiar in that for the most part it is necessary to introduce them by some route other than the alimentary canal. When, however, we consider the great breaking up undergone in the process of digestion, it will be readily seen that any characteristic peculiar to a given proteid would ordinarily be so modified before absorption as completely to alter any toxic effect that it might possess. Indeed, the anaphylactic reaction is believed to be due to a splitting up of proteid into exactly the products it would yield in intestinal digestion; the poisonous intermediate products, however, which in the latter case would undergo still farther cleavage before entering the system, are in the former liberated directly into the blood-stream, and so are free to exert their toxic action. In support of this view is the fact that in those cases in which there is excessive antibody formation, the acute anaphylactic reaction is diminished or absent; the probable explanation being that the breaking up of the proteid into its ultimate constituents is so rapid as to prevent the accumulation of toxic intermediate products in quantities sufficient to do harm. Idiosyncrasy to articles of food is to be explained, on this basis, by the absorption of sufficient unmodified proteid to react with antibodies already present, either congenitally or formed under similar previous conditions.

In addition to the "active" anaphylaxis, produced by the direct administration of sensitizing doses of proteid to the animal organism, it is possible to produce "passive anaphylaxis" by transferring hypersensibility to other animals with the serum of treated animals. This so-called passive anaphylaxis belongs in the same class as passive immunization. Further analogy is shown by the necessity of free complement to produce the reaction. If an animal be given its second dose of proteid, in nonlethal amount, at an interval greater than the ten days at which hypersensitization reaches its height, the excess of antibodies present becomes bound, and the animal becomes relatively free from farther reaction. This is the so-called anti-anaphylaxis.

According to the views of Ehrlich, all antibodies are merely the result of the increase of substances already present in the normal animal; and in accordance with this view is the fact that the introduction of a sufficient quantity of foreign proteid into a perfectly normal animal will produce toxic effects. If, however, care be taken to give it in a quantity insufficient to cause death, the antibodies normally present will cause a relatively slow production of the toxic intermediate products, and at the same time formation of both the cleavage products and the antibodies evoked by the injection will take place. If now this serum be transferred to a second normal animal, acute poisoning will intervene—the so-called antiserum-anaphylaxis. The explanation probably lies in the fact that in the second animal there is already present a certain amount of antibody, which, in conjunction with the amount present in the injected serum, is sufficient to produce acute anaphylaxis.

By far the most interesting of the recent developments of this subject are the relations that are being established between anaphylaxis and many infections, both acute and chronic. It is becoming generally accepted that many of the processes which formerly we were wont to ascribe purely to specific toxins are more properly to be considered as due to the interaction of bacterial proteid and antibodies already present, or formed during the infection, in the host. This phase of the subject, however, has been recently taken up in these columns,[2] and need not be discussed further at this time.

Current Comment

SOME PROBLEMS OF SCHOOL INSPECTION

While school inspection has been the subject of much commendatory mention in the public press, some objections have been raised to proposed legislation making it compulsory. The question has been raised as to the propriety of complete examinations requiring exposures of the chest, etc., especially in the older girls, it being urged that parents should be allowed to select the physician to make the examination. As perhaps might have been expected, the sectarian schools of medicine have been more or less to the fore in the objections. This trouble has been encountered in Newark, N. J., where, for instance, examination of the heart and lungs has been insisted on as a feature of school inspection. It is natural that the inspecting authorities should want to forestall criticisms as to the thoroughness of their work, which would be very liable to be made by those not in full sympathy with the movement. It would seem, however, that since the school has no interest in heart disease further than as it affects the functional capacity of the heart, such tests as are necessary might be made without requiring any exposure which would be offensive to the pupils and resented by their parents. It would doubtless be well for those engaged in the work to remember that medical school inspection is at present on trial so far as the general public is concerned, and that lack of tact may prejudice the cause as much as lack of skill, if not more. It is not desirable that medical school inspectors shall be time-servers; but for a school physician to strain his brief authority by too arbitrary insistence on methods of inspection which parents have not learned to regard as a matter of course in private practice, would seem to be premature, to say the least. Doubtless, with greater experience, by the exercise of tact, by educating the public and winning its confidence, inspectors will be able in most instances to secure all needed information and at the same time to avoid any occasion for conflict between the authority of the home and that of the school. This is always disastrous, and would be especially regrettable just now in the case of medical school inspection.

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[2] Infection and Anaphylaxis, The Journal A. M. A., March 11, 1911, p. 746.

MONEY FOR MEDICAL EDUCATION

After a long season of neglect it seems that medical education is coming into its own in regard to financial support. Such benefactions as the recent gift of $200,000 from Dr. and Mrs. Robert W. Long of Indianapolis, toward the establishment of a teaching hospital for the Indiana University School of Medicine, indicate an increase of interest in the cause; and not only are private donors making generous contributions, but legislatures also are making more liberal appropriations for the support of their state university medical schools. Word has just been received that in Alabama $100,000 has been appropriated for the support of the medical school of the state university for the next four years; and from Nebraska comes the news that a like sum has been appropriated to establish all four years of the University of Nebraska College of Medicine on the new campus in Omaha. A smaller but no less important appropriation was that of $30,000 by the Oregon legislature which has made possible a closer relationship between the University of Oregon and its medical department—a relationship which heretofore has been largely nominal. Thus from all sections of the country come tidings of substantial gifts or appropriations for medical teaching institutions that represent the higher standards of medical education. These appropriations give much encouragement to those who have been working for the development of higher standards and lead one to believe that even more liberal appropriations will be made in the future. Surely no state could make a better investment than that which will secure better-trained physicians who are to be responsible for the preservation of the health and, therefore, of the happiness, of that commonwealth.

PROF. THEOBALD SMITH AS EXCHANGE PROFESSOR

Prof. Theobald Smith, Fabyan professor of comparative pathology at Harvard, has been appointed exchange professor for 1911-12 at Berlin University, following a plan inaugurated several years ago for the exchange of educators between the universities of Germany and the United States. This is not the first instance in which Harvard has been drawn on for the exchange professorships, but previously they have been from the faculty of arts and sciences. The drafting of Professor Smith is not only a recognition of the medical department of Harvard, but a high and well-deserved compliment to Professor Smith, who has attained eminence not only as an instructor and for his research work, but also on account of his public scientific services. He was at one time director of the pathologic laboratory of the national Department of Agriculture, and was for ten years professor of bacteriology at Columbian University, Washington, D. C. He was also director of the pathologic laboratory of the Massachusetts State Board of Health, and three years ago was awarded the gold medal of the Liverpool Society for the Study of Tropical Diseases for his studies of Texas fever. He is also known for his studies on metabolism. Professor Smith holds the degree of Ph.B., Cornell, 1881; M.D., Albany Medical College, 1883; honorary degree of A.M., Harvard, 1901; and the degree of S.D. from Harvard in 1910. In 1907 Chicago University gave him the degree of LL.D. The growing recognition abroad of the authority of the New World in medicine will be further advanced by the selection of Professor Smith, who is a worthy representative of the profession of scientific medicine.

A NEW OWEN BILL

Senator Owen has introduced a new department of health bill[1] which appears on the calendar of the sixty-second congress as Senate Bill 1. This bill is an elaboration of S. 6049 introduced by Senator Owen in the sixty-first congress, and has been modified to meet the objections raised against that measure. The principal criticisms, in fact the only ones brought out in the hearings on public health before the house and senate committees, were that there was a possibility of the functions of the state boards of health being infringed on; that the individual liberties of the people might possibly be impaired and that in organizing and administering the federal department of health there might be discrimination against some schools or sects of medicine. All of these objections were based on conjecture rather than fact, were of remote possibility and abundantly guarded against by existing laws and decisions. But in order to remove any possible grounds of objection to the bill, Senator Owen has specifically provided in the present bill that "this act shall not be construed as attempting to authorize the department of health to exercise or to attempt to exercise, without express invitation from the chief executive or other proper authority of the state, any function belonging exclusively to such state, or to enter any premises in any state without the consent of the owner or occupant thereof . . . and provided further that the department of health shall recognize no so-called school or system of medicine." These provisos should amply reassure the sincere opponents of Senator Owen's first bill who may have feared honestly, even though mistakenly, that an intelligent effort on the part of the federal government to investigate the causes of disease and to conserve the lives and health of the people might infringe on his personal rights. Such objectors have, of course, entirely failed to discriminate between the investigation of disease in the abstract and the treatment by individual physicians of individual patients. The former is a perfectly proper function of the federal government which can be exercised without affecting the rights of the individual in the slightest; the latter is and must always remain a personal prerogative, except under a form of government so socialistic in character as to be practically out of the question under existing conditions. Although the new bill explicitly removes all the honest objections which were raised to the old bill, it is not to be expected that these changes will allay the opposition to the measure, on the part of mercenary interests arrayed against further health legislation. Those familiar with the situation know that the sincere, but mistaken, objectors to the first Owen bill were only puppets in the hands of the mercenary interests which feared, and still fear, federal investigation of their business or interference with their ill-gotten profits. It is to be expected that these chronic objectors (for revenue only) will find new and equally far-fetched reasons for objecting to Senator Owen's latest bill. The public, however, will not be slow to detect the reasons for further opposition to a measure distinctively altruistic in character and for the benefit of the public. The bill provides for a department of health with a director at the head; for a subordinate commissioner of health and for the transfer of the Public Health and Marine-Hospital Service from the Treasury Department, the Bureau of Chemistry from the Department of Agriculture and the Division of Vital Statistics from the Department of Commerce and Labor. It also provides for bureaus of sanitary research, child hygiene, vital statistics and publication, food and drugs, quarantine, sanitary engineering, government hospitals and personnel and accounts. Cooperation with the health authorities of any state, as well as conferences of state health officers are also provided for. No provision is made for increased pay for the Marine-Hospital surgeons, as it is generally understood that a separate personnel bill will be introduced. Senator Owen's new bill marks a distinct advance in the development of a law to establish an effective federal department of health.

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[1] Miscellany Department, this issue, page 1208.

"APPLIED ETHICS IN JOURNALISM"

Under the above title, Theodore Roosevelt in the *Outlook* for April 15, makes some interesting comments regarding the "patent medicine" evil in its relation to the newspapers. After touching briefly on the fraud and cruelty connected with fake financial advertising, Mr. Roosevelt says:

> The patent medicine advertising represents as great an evil . . . We hear much of the influence exercised by great corporations on the press, and unquestionably this influence has been and is, very serious. Yet it cannot be greater than the evil influence exercised by the backers of objectionable medical and financial advertisements when they spend between thirty and forty millions a year in the daily newspaper press.

After thus speaking of the matter in the abstract, Mr. Roosevelt, as is his wont, comes down to the concrete by calling attention to some of the reasons why this form of fraud on the part of the newspapers is not more often fought. The New York *Herald* until 1907 carried without let or hindrance, in what was called the "Personal Columns," but which should have been designated "Abortionist Columns," advertisements that were both criminal and obscene. In that year, however, the Medical Society of the County of New York found a United States district attorney with sufficient courage to attack this cesspool of filth with the result that a verdict was secured against the proprietor of the *Herald* and he was forced to pay a fine of $25,000. Of the attitude taken by other newspapers regarding this case, Mr. Roosevelt says:

> In this case, by the way, many of the newspapers which are ordinarily of reasonable virtue so hid the facts as to prevent any effective understanding by the public of the real reason for the animosity very naturally shown by Mr. Bennett [proprietor of the *Herald*] through his papers ever since toward all the public officials who were in any way connected with bringing him to justice for his crime.

It is also worth while to call attention, at this time, to the fact that the *Herald*, ever since the "Personal Column" episode, has done its best to vilify and blackguard the medical profession, this, presumably, because its proprietor resents not only the loss of actual cash for payment of the fine, but also the still greater loss of revenue from the abortion advertisers whose "copy" became unacceptable in the eyes of the United States post-office authorities. The *Herald* was one of the first, if indeed it was not the first, of the New York papers to espouse the cause of the "patent medicine" interests' latest organization for fighting the American Medical Association—the National League for Medical Freedom.

Our ex-president also calls attention to the appalling number of "patent medicine" and quack advertisements that appear in the New York *World* and in the "World Almanac" for 1911 and then says:

> A peculiarly objectionable feature of these medical advertisements, exactly as with the financial advertisements, is that it is the poorest class, the most helpless class, of people that are most hurt by them. I believe that legislation could be framed to forbid such advertisements. In default of such legislation there is at least need that we should discriminate in the sharpest way between newspapers which war against this evil and newspapers which encourage it.

On the other hand, Mr. Roosevelt has expressed the greatest admiration for publications, such as *Collier's Weekly*, which have rendered the public a great service by exposing the viciousness and fraudulence of quackery and the "patent medicine" business. His excellent editorial closes as follows:

> We owe hearty respect to the public servant who, like ex-District Attorney Stimson, fearlessly does his duty in bringing to justice a great newspaper that goes wrong, although he knows that his action will be of harm to himself personally; and we are bound to pay a tribute of deserved respect to a paper like *Collier's* when, in a matter so vital to the public well-being, it wages so fearless, aggressive and efficient a fight for honesty and decency.

FOUNDED ON FALSEHOOD

There is at present before the United States Supreme Court a case, the decision in which will either wonderfully strengthen or irrevocably weaken the federal Food and Drugs Act. O. A. Johnson, a mail-order cancer-cure quack of Kansas City, Mo., shipped some of his nostrums in interstate commerce. The labels on these preparations bore the statement that they would cure cancer. As every physician knows, and as a large proportion of intelligent laymen know, this statement is an untruth. The government brought suit, under the Food and Drugs Act, declaring Johnson's nostrums misbranded in that the statements on the labels were false. Johnson fought the case, and it has finally reached the Supreme Court of the United States. He insists that the Food and Drugs Act was intended by Congress only to deal with the composition of medicines and not with their therapeutic value. When the case was being argued two or three days ago before the justices of the Supreme Court, Solicitor-General Lehmann maintained that, in drawing up the Food and Drugs Act, Congress recognized that it was just as important to deal with the curative effects of medicines as with their ingredients. Justice Lurton interrupted the Solicitor-General by asking whether such an interpretation of the law as the government desires "would not break up the patent-medicine business." Mr. Lehmann replied: "It probably would, and I know of nothing within the scope of Congress that would be more beneficial." The question by the justice and the answer by the solicitor-general are worth pondering over. Men who have reached the positions held by Solicitor-General Lehmann and Justice Lurton cannot, truthfully, be accused of being fanatics or prone to making radical statements. On the contrary they are likely to be, if anything, ultraconservative. Nevertheless, one of these men plainly intimates and the other frankly says that the "patent medicine" business is based on fraud and deceit. No other interpretation of the question and answer seems possible. Justice Lurton asks whether, if the "patent medicine" makers have to tell the truth about their products, it would not destroy their business; Solicitor-General Lehmann says that it would!

Medical News

CALIFORNIA

Personal.—Dr. Emil O. Jellinek, San Francisco, has gone abroad.——Dr. Norman D. Morrison, San Mateo, has been elected trustee of the San Mateo Union High School District.

Society Meeting.—Long Beach Medical Society, at its annual meeting, April 7, elected Dr. William H. Newman, president; Dr. Francis L. Rogers, secretary-treasurer; Dr. Albert C. Sellery, councilor. A committee composed of Drs. Albert C. Sellery, William H. Jones and Theophilus C. Donnell was appointed to arrange for the entertainment of the delegates of the American Medical Association.

Arequipa Sanatorium.—A *sanatorium* for the treatment of incipient cases of tuberculosis is assured to San Francisco by the gift of a tract of 40 acres of land near Fairfax, Marin County, by *Henry Bothin. Plans* for the structure have been made, and $5.000 has thus far been subscribed for the erection of the building. The entire cost of the institution will be about $20.000. Dr. Philip King Brown, San Francisco, is to be director of the sanatorium and the medical board will include Drs. Louis P. Howe, Richard G. Broderick and Lewis S. Mace, all of San Francisco. The institution is to be known as Arequipa, an Indian term meaning a place of rest.

CONNECTICUT

County Physicians Hold Meeting.—The one hundred and nineteenth annual meeting of the Hartford County Medical Association was held in Hartford, April 4. The following officers were elected: president, Dr. Harmon G. Howe, Hartford; vice-president, Dr. Henry A. Deane, South Windsor; secretary-treasurer, Dr. Paul P. Swett, Hartford; councilor, Dr. Oliver C. Smith, Hartford; censor, Dr. Frederick B. Willard, Hartford; delegates to the state society, Drs. Charles M. Wooster, Tariffville; Myron P. Robinson, Windsor Locks; Thomas G. Sloan, South Manchester; Paul P. Swett, *Hartford*; William R. Miller, Southington; John F. Dowling, Hartford, and Frank L. Waite, Hartford.

ILLINOIS

State Takes Over County Institutions.—By the terms of an agreement ratified April 12 by the house committee on appropriations, it is agreed to place on the omnibus appropriation bill an *item of* $450.000 to care for the ordinary and extraordinary expenses of Cook County Institutions, Dunning, until July 1, 1913.

Personal.—Dr. Emery W. Goembel, Rockford, who was operated on for appendicitis, April 10, is reported to be well on the road to recovery.——Dr. James A. Rutledge, Elgin, has been appointed medical director of the Modern Woodmen sanatorium, Colorado Springs.——Dr. Willis G. Hatch, Rockford, fractured his arm above the wrist while cranking his automobile, April 2.——Dr. Jacob S. Kauffman, Blue Island, has been appointed a member of the consulting staff of Oak Forest Infirmary.

State Alienists Organize.—The members of the medical staffs of the various state hospitals held a meeting in Elgin, April 12 and 13, and organized the Illinois State Hospitals Medical Society, and elected the following officers: Dr. H. Douglas Singer, Kankakee State Hospital, president; Dr. Charles F. Read, Watertown State Hospital, vice-president; and Dr. Ralph T. Hinton, Jacksonville State Hospital, secretary-treasurer. The object of the society is to study diseases of the insane, epileptics and other classes of unfortunates who are inmates of state institutions.

Recent State Board Cases.—In the case of the people versus Madame Florencia A. T. Powella, M.C.S., a "bloodless medical surgeon chiropodist," the defendant was tried before a jury in the municipal court for practicing medicine without a license, was fined $100 and costs. After a motion for a new trial had been overruled she appealed her case.——The State Board also prosecuted "Prof." J. C. Fisher, who was found guilty and fined $100 and costs for practicing medicine without a license. This individual is said to have had an altar in his front room before which patients were brought. The "Professor" murmured in front of the altar and finally turned and stated the nature of the ailment. He then rubbed the neck and temple of the patient, gave him medicine and charged him $2.

Antituberculosis Laboratory.—The latest donation of James A. Patton, Evanston, is that of half a million dollars to be devoted to the cause of medical reseach regarding tuberculosis. This donation is to be used to establish a laboratory in connection with Northwestern University Medical School which will band all its energies in the search for a cure for tuberculosis. Mr. Patton's original gift of $200,000 will be devoted to the establishment of a new chair in the medical school to be known as the chair of experimental or research medicine. The entire time of the professor in charge of this *department* will be given to investigation along lines indicated, and the work of the department will be in reciprocity with the other laboratories of the school. Four recent graduates will be paid a living salary, and will be induced to remain a year or longer in the laboratory before engaging in practice. In this way a school of investigation will be established, and the abler men will be induced to remain to engage in research work. Dr. Arthur R. Edwards, dean of the school, has been selected as head of this movement.

Chicago

Small-Pox.—During the week ended April 15, fourteen cases of small-pox were sent to the Isolation Hospital. Of these three were imported, thirteen had never been vaccinated, and the other one had an imperfect doubtful scar made in childhood. Five cases were taken to the hospital from one family. The physician in this case pronounced the disease chicken-pox and failed to report the case to the department of health.

Personal.—Dr. John B. Murphy, who has been ill with typhoid fever, is convalescent.——Dr. E. Fletcher Ingals is ill with typhoid fever but is reported to be doing well.——Dr. Eugene S. Talbot has been ill for several days with pneumonia, but is reported to be in good condition.——Dr. Clara Ferguson has been appointed a member of the medical staff of Cook County Hospital.——Drs. Hugh N. MacKechnie, *John A.* Graham, George N. Pratt, Frank J. Fara and Douglas A. Payne have been appointed members of the consulting medical staff of Oak Forest Infirmary.——Dr. Willis O. Nance was elected alderman at the recent election.

Dr. Evans' Valedictory.—On retiring from the office of health commissioner of Chicago, Dr. William A. Evans makes the following statement to the public in the *Weekly Bulletin:*

> When, in 1907, I assumed responsibility for the health department, I wrote that the work had been evolving; my predecessors had brought it up to a certain point and that I would try to build still further I think that the reputation of the department throughout the world, the growth of the older activities of the department and development of new activities, the greater security of the people and a better food and air supply, and a greater public interest in health, are further steps in that evolution. Perhaps most significant of all, the department is incorporated as, and in truth is, a school of sanitary instruction. Here, too, there is evolution, since the nucleus of it was this bulletin, begun by Drs. Reynolds and Reilly. I am steadfast in the hope and I assure the public of my belief that my successor will continue this evolution, fighting off the few in the interest of the great, needful mass.

And now I wish to say in sincerity that the results accomplished have been due to the brains, energy and faith of the men in charge of bureaus, and the men and women under them; to the vision and the courage of the mayor; to the cooperation of other departments of the city government; to the city council, which has passed every important ordinance asked of it, save one—that requiring that milk should be kept cold.

KANSAS

Opposes Contract Practice.—Shawnee County Medical Society, at its April meeting, adopted an amendment providing for the expulsion of any member of the society proved to have engaged in lodge or club practice.

LOUISIANA

Lumber Company will Operate Hospital.—Beginning with April 1, the Bogalusa Hospital is being operated directly by the Great Southern Lumber Company. Dr. Herbert C. Cole has been made chief surgeon of the institution.

Parish Election.—Calcasieu Parish Medical Society, at its annual meeting, at Lake Charles, April 4, elected Dr. Allen J. Perkins, Lake Charles, president; Dr. Hugh L. Sanders, West Lake, vice-president; Dr. Samuel George Kreeger, Lake Charles, secretary-treasurer (reelected), Dr. Edward R. Gandy, West Lake, delegate to the state society, and Dr. Norman S. Craig, Jennings, alternate.

New Home of Parish Society.—The new home of the Orleans Parish Medical Society, New Orleans, was dedicated with fitting ceremonies, March 13. The principal address of the evening was delivered by Dr. Stanford E. Chaillé on "The Organization of the Louisiana State and Orleans Parish Medical Societies." On March 27, the newly elected officers were installed, including Dr. Benjamin A. Ledbetter, president; Drs. Eugene H. Walet and Charles N. Chavigny, vice-president; Dr. Lawrence R. DeBuys, secretary; Dr. William H. Block, treasurer; Dr. Homer Dupuy, librarian, and Drs. Joseph T. De Grange, Arthur Nolte and William H. Seemann, directors.

MARYLAND

The State Sanatorium.—Plans for the new hospital buildings in connection with the Maryland State Tuberculosis Sanatorium, Sabillasville, have been finished. A new administration building is to be erected and also additional wings will be built, which will increase the capacity of the institution to 200.

Annual Meeting of Ladies' Auxiliary.—The Ladies' Auxiliary of the Widows' and Orphans' Fund, Medical and Chirurgical Faculty of Maryland, held its annual meeting in Baltimore, April 11. The following officers were elected: president, Mrs. William G. Gombel; vice-presidents, Mrs. Albert H. A. Mayer and Mrs. John G. Jeffers; recording secretary, Mrs. L. K. Michael; corresponding secretary, Mrs. Charles H. Bubert; treasurer, Mrs. Marshall L. Price, and executive committee, the officers and Mrs. James F. H. Gorsuch, Mrs. T. Casper Gilchrist, Mrs. William E. Wiegand and Mrs. George L. Duane.

Personal.—Dr. Warren P. Morrill, M. C. N. G., Md., Baltimore, has been detailed to take part in the maneuvers at San Antonio, Tex.——Dr. Thomas J. Coonan, Westminster, has been elected chairman of the Democratic State Central Committee for Carroll County.——Dr. R. A. Shankwiler, formerly resident physician at Eudowood Hospital for Tuberculosis, has been made superintendent of the Detroit Tuberculosis Sanatorium.——The emperor of Germany has conferred the order of the crown, second class, on Dr. William H. Welch, Baltimore, in appreciation of his services in propagating German medical science in the United States and in spreading the use of the German language in the medical schools of America.

MASSACHUSETTS

Boston Reappointments.—Dr. Samuel H. Durgin has been reappointed chairman of the board of health; Dr. Nathaniel W. Emerson, a trustee of the infirmary department, and Dr. Miles Martin, overseer of the poor.

The State Society Meeting.—The annual meeting of the Massachusetts Medical Society will be held in Boston, June 13 and 14. Two meetings of each section will be held the first day, and the section on tuberculosis will be held on the afternoon of that day. One of the sessions of the medical section will be devoted to a symposium on syphilis. The councilors' meeting will be held at noon on Tuesday and the Cotting lunch will be served as usual. The section meetings and the meeting of the council will be held at the Harvard Medical School. School buildings and laboratories will be open to the society and special scientific exhibits or exhibits illustrating papers of interest to members will be given in the laboratories. The Shattuck lecture and reception will be held as usual on Tuesday evening in the medical library. The annual meeting and discourse will be held on Wednesday at the medical school, after which the annual dinner will be served at Symphony Hall. Immediately after the dinner the society will adjourn to the Country Club to witness the annual inter-district baseball game.

MISSOURI.

Additional Accommodation in Tuberculosis Pavilion.—Through the efforts of the local antituberculosis society, six beds have been added to the pavilion for tuberculosis patients at the Kansas City General Hospital, making the total capacity twenty-two beds.

Colored Physicians to Work Among Their Race.—At the request of Dr. Walter S. Wheeler, health commissioner of Kansas City, the hospital and health board have approved the assignment of two colored physicians, Drs. Charles F. Clark and Lloyd E. Bailer, who will be assigned to look after colored charges in the city.

St. Louis

Intern Examination Held.—As the result of the competitive examinations for interns for the City Hospital, St. Louis University medical students obtained twenty-seven places and Washington University seventeen.

Personal.—Dr. Henry S. Atkins, superintendent of the Municipal Tuberculosis Sanatorium, has resigned.——Dr. Arthur H. Sewing, first resident physician at the City Hospital, has been appointed resident physician, vice Dr. Walter R. Hewitt, resigned.——Dr. H. Wheeler Bond, health commissioner, has sent to the comptroller a check for $1,799.18, representing the difference between the amount received as fees for registering vital statistics under the state law and the expense of conducting the office.

NEW HAMPSHIRE

Medical School Commencement.—The one hundred and thirteenth graduation exercises of Dartmouth Medical School, Hanover, were held, March 28, in College Hall. Dr. John M. Gile delivered the address to the graduating class, and President Ernest F. Nichols conferred degrees on a class of nine.

County Medical Society Election.—At the sixth annual meeting of the Hillsboro County Medical Society, held in Nashua, April 4, the following officers were elected: president, Dr Herbert L. Smith, Nashua; vice-president, Dr. James B. Pettingill, Amherst; secretary-treasurer, Dr. Ella B. Atherton, Nashua (reelected); auditor, Dr. Bradford Allen, Nashua, and delegate to the state society, Dr. Walter H. Abbott, Hillsboro.

National Guard Appointments.—At the recent meeting of the governor's council, the following nominations were made to fill vacancies in the medical department of the New Hampshire National Guard: Captain Russell Wilkins, Concord, promoted to major; Lieutenant Bertell L. Talbot, Peterboro, made captain, vice Dr. Wilkins, promoted; Dr. Robert J. Graves, Concord, commissioned first lieutenant, vice Dr. Talbot promoted, and Dr. Charles S. Walker, Keene, first lieutenant, vice Dr. Jesse B. Hyland, Keene, resigned.

NEW YORK

Sanitarium for Dunkirk.—Plans have been completed for a sanitarium to be built at Cobb Mineral Springs, Dunkirk, to cost $15,000, to accommodate thirty patients and be completed July 1.

Matteawan Investigation.—Dr. Austin Flint, Dr. Carlos F. MacDonald and Goodwin Brown, who were named by Governor Dix to investigate conditions at the Matteawan State Hospital, have begun their work. They will question each one of the 897 patients as to food, treatment and other conditions. It is expected that the investigation will require several weeks.

Rabies in Yonkers.—Information has come from the New York City Health Department that during the last two months thirteen persons have received treatment for mad dog bites. A representative of the health department has advised instant cooperation with the state authorities. All dogs have been barred from the streets for sixty days unless muzzled or on a leash.

County Society Meeting.—At the quarterly meeting of the Oneida County Medical Society, held in Utica, April 10, communications were read from three physicians who were expelled from the society a year ago for violating the principles of ethics by advertising certain cures, giving notice that they intended to appeal to the state medical society from the decision of the county society. A general discussion was held on contract practice and a committee was appointed to confer and report on the matter.

New York City

Addition to Sloane Maternity Hospital.—Plans have been filed for the building of four additional stories on the Sloane Maternity Hospital for private patients. The cost of this addition will be about $60,000.

Cancer Home Asks Aid.—St. Rosa's Home devoted to the care of victims of incurable cancer is making an earnest effort to complete a fund of $50,000 to be used in the erection of a new building. The building fund at present amounts to $8.142.

New Step in the Antituberculosis Movement.—Babies may be seen in Central Park wearing the admonition "Please do not kiss me. I do not like it. It is harmful." It is hoped that this will assist in limiting other diseases besides tuberculosis.

Vacancy in Clinic.—Washington Heights Hospital announces vacancies in the medical and surgical clinic of the institution, Tuesday, Thursday and Saturday from 2 to 4 p. m. Application should be made to Dr. Louis Neuwelt, 2424 Seventh Avenue, New York City.

Medical Staff Resigns.—The entire medical staff of St. John's Hospital. Long Island City. is said to have resigned. The reason is said to be the objection of the members of the staff to the rules governing the institution. The 750 patients in the institution are being cared for by the visiting staff.

Against Bronx Hospital.—The State Board of Charities has disapproved of the incorporation of the Bronx Hospital which Manhattan physicians have been anxious to establish in the Bronx, but which was opposed by physicians in that locality. The Bronx physicians stated that they had a plan of their own on foot to start a hospital and they regarded the efforts of the Manhattan physicians as an encroachment on their territory.

Ships Bring Disease.—The death of two passengers on the Greek steamship *Themistocles* and of two on the Fabre liner *Germania*, from cerebrospinal meningitis, have caused the detention of the passengers in quarantine as precautionary measures.——Two cases of spinal meningitis were discovered among passengers on the Fabre liner *Venezia*, on its arrival in New York, March 29.——The steamer *Verona*, which arrived from Italy, March 31, was detained in quarantine on account of a case of small-pox among cabin passengers.

The Milk-Supply of New York City.—Commissioner Lederle, in an address before the International Pure Milk League, outlined the work of the department in its effort to secure pure milk. He stated that arrangements had been completed for the opening of fifteen milk stations. The health department will furnish physicians, nurses, milk inspectors and ice-boxes but will not handle the milk. They asked dealers to bid for the privilege of furnishing the milk. They have decided that for the present they will not pasteurize the milk but will instruct the mothers in the modification in their homes. The greatest problem that confronts the health department is the 14,000 little stores where milk is sold in small quantities.

Health Department Bulletins.—Recent bulletins of the department of health of New York City refer to the public control of venereal diseases in the city, recommending the early adoption of the plan of the sanitary control of such diseases; announces the passage of a resolution requesting the board of aldermen to approve of the issue of special revenue bonds to the amount of $10.000 for the purchase of food supplies for patients at the two day-camps maintained by the department on the ferry boats *Middletown* and *Susquehanna*, as these camps are among the most effective agencies in the extension of relief to the tuberculous poor, and in the campaign for the prevention of tuberculosis. The bulletin of April 7 gives a report of the work of the division of food inspection, showing the arrest of four candy dealers for violation of the sanitary code, and of one fruit dealer who sold decayed fruit, and the condemnation of 4,617 pounds of foodstuff on April 5. The succeeding bulletin announces that twenty-five arrests had been made on the upper East Side for the exposure of foodstuff and for offering decayed food for sale in violation of the provisions of the sanitary code. Twenty-two of the accused were found guilty and fined. The resolution of the board of health on the sanitary control of venereal disease for the protection of public health has been endorsed and approved by the New York Urological Society. The bulletin of April 10 is devoted to diarrheal diseases of infants under one year of age. During the first three months of 1911, there were 508 deaths of children from this cause in Greater New York as compared with 348 during the corresponding period of 1910. This increase has taken place almost entirely in institutions and hospitals where children are cared for. This is accounted for by the fact that the bulk of these deaths occurred in the New York Foundling Hospital where abandoned children, who are generally of low vitality, are received and cared for. The bulletin of April 11 deals with the spitting nuisance, and shows that during the first quarter of 1911, 434 arrests were made, 279 fines were imposed amounting to $414; forty-four defendants were discharged, and sentence was suspended in 111 cases. An interesting feature of the report is the low percentage of the accused who were fined from the Boroughs of Brooklyn, Queens and Richmond, as compared with those of Manhattan and Bronx.

NORTH CAROLINA

Personal.—Dr. William W. Faison, Goldsboro, has been elected for a second six-year term as superintendent of the State Hospital for Colored Insane. The institution now contains 730 patients.——Drs. Daniel G. Caldwell, Concord, and Gurley D. Moose, Mount Pleasant, have been elected members of Cabarrus County Board of Health.——The new Edgecombe County Board of Health has elected Drs. James C. Braswell, Whitakers, and Henry H. Whitaker, Hilliardston, as additional members of the board.——Drs. Andrew L. Pendleton and William J. Lumsden, Elizabeth City, have been appointed members of the board of health of Pasquotank County.

Hookworm Activity.—Dr. John A. Ferrell, assistant secretary of the State Board of Health, in his report of the hookworm investigation for the three months ended March 3, shows that 1,153 of the 1,500 practitioners in the state have made reports on hookworm disease, and 519 of these report that they have treated cases. All together 17,933 cases of hookworm were reported as having been treated by physicians of the state. Dr. Ferrell estimates that 25,000 cases have probably been under treatment. There were 16,994 specimens sent to the laboratory for examination and hookworm infection was found in 5,178 of these. The laboratory of hygiene has been made use of by 483 physicians up to date. In the inspection of schools, it is reported that 266 white and 69 colored schools have been inspected and that nearly 6,000 people have been informed about hookworm disease by public lectures. The number of school children reached by talks and visits of district directors of sanitation is estimated at 20,000. The state legislature made an appropriation of $5,000 for the work against hookworm.

OHIO

Laboratory Ready.—The bacteriologic laboratory of the Toledo health office, for which $1,000 was appropriated by the council, is now ready for operation.

Personal.—Dr. and Mrs. William B. Van Note have returned to their home in Lima after spending the winter in Miami, Fla.——Dr. John P. Beneke, Cincinnati, was painfully injured in a runaway accident, March 29.——Dr. Andrew J. Timberman, Columbus, who has been ill with septicemia in Lakeside Hospital, Cleveland, is reported to be improving.

TENNESSEE

Annual Clinic at Meharry.—The annual surgical clinic at Meharry Medical College, Nashville, was held March 13-18, with Dr. Daniel H. Williams, Chicago, as chief of clinic.

Does Not Want Prescriptions Refilled.—Washington County Medical Association, at a recent meeting in Johnson City, adopted a resolution demanding that prescriptions shall not be refilled by uruggists.

Folder on Tuberculosis—The board of health of Nashville has prepared an instructive folder on "Tuberculosis, Its Care and Prevention," which is being distributed very generally by the Antituberculosis League of Nashville.

State Association Meeting.—The seventy-eighth annual meeting of the Tennessee State Medical Association was held in Nashville, April 11-13, under the presidency of Dr. John A. Witherspoon, Nashville. Chattanooga was selected as the place of meeting for 1912. The following officers were elected: president, Dr. Charles J. Broyles, Johnson City; vice-presidents, East Tennessee, Dr. James H. Atlee, Chattanooga; West Tennessee, Dr. John D. Brewer, Newbern, and Middle Tennessee. Dr. Wesley J. Breeding, Ravenscroft; secretary-editor, Dr. Perry Bromberg, Nashville; delegate to the American Medical Association, Dr. Jere L. Crook, Jackson; alternates, Drs. Octavius Dulaney, Dyersburg, and A. Bennett Cooke, Nashville, to fill the unexpired term of Dr. Sidney S. Crockett, Nashville.

TEXAS

Gift to College.—Dr. and Mrs. James H. Wayland, Plainview, announce a gift of $100.000, on April 13, to the Wayland Baptist College, which bears their name.

Approves of Lay Press.—The question of whether the reports of meetings of Harris County Medical Society should be excluded from lay newspapers in the future was put to a vote at the meeting of March 31 and overwhelmingly voted down.

Man Arrested Was Not Member.—At the meeting of the Bexar County Medical Society in San Antonio, March 9, a resolution is said to have been adopted stating that "Dr. Herman T. Wolff, recently arrested by order of the justice of the peace, is not a member of this society and is in no way related to, and should not be confused with Dr. William M. Wolf, who is a worthy member in good standing of said county society."

Personal.—Dr. Joseph H. Reuss, Dallas, has purchased Salome Hospital, Cuero, from the Ladies' Hospital Association and will take charge of the institution about June 1.——Dr. John S. Turner, Dallas, has been reelected medical adviser of the Southland Life Insurance Company.——Dr. J. W. Sandlin has been appointed health officer of Humble.——Dr. Francis G. Floeckinger, Taylor, has let the contract for a private sanitarium to cost $15,000.

Medical Department Organized.—By orders from the adjutant general's office, March 27, the Medical Department of the Texas National Guard is defined. It consists of a medical corps with one chief medical officer with the rank of major, four majors, ten captains and seven first lieutenants. Dr. Alois B. Kennedy, Bonham, remains as chief medical officer. The hospital corps will remain as at present with headquarters in Dallas, and with Captain Fred B. Johnston, Dallas, in active charge.

UTAH

Ask for Military Sanitarium Near Salt Lake.—A memorial to congress asking that a naval and military sanitarium be established at the hot springs north of Salt Lake, and tendering a site free of cost to the government, has been adopted by both branches of the legislature.

District Society Election.—At the annual meeting of the First District Medical Society, held in Logan, the following officers were elected: president, Dr. David C. Budge, Logan; vice-president, Dr. Charles A. Canfield, Preston, Ida.; and secretary-treasurer, Dr. Eugene H. Smith, Ogden. The society passed a resolution that the State Board of Health be given power to require listing of social disease by number, the name of the individual affected not being given.

Elections.—At the annual meeting of the State Board of Health, Dr. Francis S. Bascom, Salt Lake City, was unanimously reelected president, and Dr. Theodore B. Beatty, Salt Lake City, secretary.——The Utah State Board of Medical Examiners met for reorganization, April 5, and elected Dr. David C. Budge, Logan, president; Dr. Frederick W. Taylor, Provo, vice-president; Dr. George F. Harding, Salt Lake City, secretary, and Dr. Frederick E. Straup, Bingham Canyon, treasurer.

Personal.—Dr. Albert N. Hanson, Salt Lake City, has been elected physician of Salt Lake County, vice Dr. Thomas G. Odell, Salt Lake City.——Drs. Philemon M. Kelly, American Fork, Horace C. Holbrook, Lehi, and Frank E. Winter, Payson, have been appointed deputy physicians of Utah County.——Drs. E. L. Emrich, Alexander G. Robertson, Sandy, Frederick E. Straup, Bingham, and Milford B. Bransford have been appointed health officers of the several districts of Salt Lake County.——Dr. T. William Stevenson has been appointed assistant physician of Salt Lake County.

GENERAL NEWS

Interurban Clinicians Meet.—The thirteenth meeting of the Interurban Clinical Association was held at Johns Hopkins Hospital, Baltimore, April 7 and 8. The meeting was opened by the president, Dr. Alfred Stengel, Philadelphia, and the address of welcome was made by Dr. Thomas McCrae of the medical staff of Johns Hopkins University.

Pathologists Elect New Officers.—The American Association of Pathologists and Bacteriologists held its annual meeting in Chicago, April 14, and elected the following officers: president, Dr. Richard M. Pearce, Philadelphia; vice-president, Dr. John J. McKenzie, Toronto, Ont.; secretary, Dr. Harold C. Ernst, Boston; and treasurer, Dr. Frank B. Mallory, Boston.

Congress on Hygiene.—The Fifteenth International Congress on Hygiene and Demography will be held at Washington, D. C., Sept. 23-28, 1912, authorized by Congress. Acceptances have already been received from twenty-two foreign governments. English, French and German are to be the official languages for papers and discussions. Dr. Henry P. Walcott, Boston, will be active president. Invitations have been sent to the governors of each state to appoint a committee of not more than five members to cooperate with the committee on organization in planning and preparing the exhibition of the congress. The secretary-general of the organization is Dr. John S. Fulton, Washington, D. C. Dr. William H. Welch, Baltimore, is chairman of the executive committee. The work of the congress will be divided in nine sections: that of hygienic microbiology and parasitology will be presided over by Dr. Theobald Smith, Boston; that on dietetic hygiene and hygienic physiology, by Prof. Russell H. Chittenden, New Haven, Conn.; that on hygiene of infancy and childhood and school hygiene, by Dr. Abraham Jacobi, New York City; that of industrial and occupational hygiene, by Dr. George M. Kober, Washington, D. C.; that of control of infectious diseases, by Dr. Hermann M. Biggs, New York City; that of state and municipal hygiene, by Dr. Frank F. Wesbrook, Minneapolis; that of the hygiene of traffic and transportation, by Dr. Walter Wyman, surgeon-general, U. S. P. H. and M.-H. Service, Washington, D. C.; that of tropical, military and naval hygiene, by Dr. Henry G. Beyer, medical director, U. S. Navy, Washington, D. C.; and that of demography by Prof. Walter F. Willcox, Cornell University, Ithaca, N. Y. The exhibition is intended to illustrate the present status and recent progress of public hygiene and vital statistics, especially in the United States, and will be kept open for a week or more after the close of the congress. The director is Dr. Joseph W. Schereschewsky, U. S. P. H. and M.-H. Service.

LONDON LETTER

(From Our Regular Correspondent)

London, April 8, 1911.

The Bleaching of Flour

As shown by the agitation in favor of "standard bread," described in a previous letter to The Journal, much attention is now being directed to the composition of bread, and the whiteness of bread, previously regarded as a sign of quality, is now denounced as obtained by sacrificing some of the most important constituents (protein and salts). The whiteness is sometimes obtained by chemical bleaching of flour and this is pointed out as another disadvantage, and Dr. E. W. Hamill, government food inspector, has issued an important report on this subject. The practice of flour bleaching originated in Great Britain about ten years ago. Various substances have been used as bleaching agents, but nitrogen peroxid is the only one which has given satisfactory results, and all commercial bleaching of flour at present depends on the use of this substance. Dr. Hamill thinks that when bleaching is properly carried out it produces no appreciable effect on the qualities of flour. It may be of assistance in maintaining uniformity in the appearance of flour milled from different wheats, but at the same time it enables the miller to use cheaper wheats and to transform what would otherwise be cheap dark-colored flour into a whiter higher-priced article. Owing to bleaching, color is no longer a criterion of the quality of flour. Among "improvers" added to flour is acid calcium phosphate. As this sometimes contains arsenic as an impurity this practice is serious. A sample improver recently examined was found to contain 0.07 grain of arsenic per pound. Dr. Hamill concludes that these sophistications are attended with risk to the consumer.

Prof. Karl Pearson's Work

In a previous letter to The Journal, the munificent endowment of a chair of eugenics at the University of London by the late Sir Francis Galton, and his wish that its first occupant should be Prof. Karl Pearson, were reported. The position of Professor Pearson in biologic science is rendered unique by his mathematical methods. As professor of applied mathematics in the University of London, he has brought to bear on biologic problems an unprecedented knowledge of mathematics. It was the work of Sir Francis Galton, who largely used mathematical methods, which induced Pearson to enter this field, in which he may now be regarded in some sense as Sir Francis Galton's successor. His first labors were directed to the discovery of methods for the description of the various types of variation in living creatures. These methods, which he elaborated more than fifteen years ago, have stood a prolonged trial. They have been used for the elucidation of an enormous mass of phenomena, ranging from the stature of school children to the powers of the leukocytes to ingest microbes. Sir Francis Galton first realized the importance of what is called correlation and showed how to measure it. Thus two characters are often found associated with a frequency which is greater than can be attributed to chance but not sufficient for the relation to be regarded as cause and effect.

there is a general impression that tall parents tend to have tall children; but it is also known that a tall father will not inevitably have a tall son. The relation between the stature of the parent and the stature of the son is neither one of obvious cause and effect on the one hand, nor one of pure chance on the other. To determine the exact value of the relation between these two extremes is the study of correlation. In this field. Prof. Pearson has worked indefatigably. He has devised methods for determining the correlation in a great variety of cases, and also for judging as to the weight to be attached to determinations based on a limited number of trials. In a long series of papers many of which have appeared in the the journal *Biometrika* edited by him, Professor Pearson and his pupils have applied these methods to problems taken from all departments of biology, medicine and sociology. The intensity of inheritance of physical and mental characteristics in man, variation in different types of plants and animals, the value of vaccination and antityphoid inoculation, the relation between social status and fertility, and the respective importance of hereditary tendencies on the one hand and of increased opportunities for infection on the other in the spread of consumption, are examples of the subjects discussed. The work has been done at the University of London Eugenics Laboratory established by Sir Francis Galton. Probably half of the rising generation of mathematical statisticians are pupils of Professor Pearson or have been profoundly influenced by his teaching.

Infectious Diseases in London

The epidemic of measles described in a previous letter to THE JOURNAL is on the decline. The deaths from the disease which in the preceding three weeks have been 175, 197 and 182 have fallen to 153 in the last week, but this figure is ninety-two above the average. The outbreak of small-pox is not yet quite over. Three patients have been admitted into hospital in the past week against ten, one and one in the previous three weeks. There are now twenty-eight small-pox patients in the hospitals.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 7, 1911.

Mild and Curable Forms of Myocarditis

On April 4, Dr. Charles Fiessinger of Paris read a paper before the Académie de médecine, the purpose of which was to show that toward the end of attacks of certain infectious diseases (acute articular rheumatism, influenza) asystolic conditions are observed which are really akin to mild forms of myocarditis. In spite of their gravity, these conditions of cardiac insufficiency may be completely cured under treatment by digitaline in small doses, continued over a long period, such as 0.0001 decimilligram of digitaline crystalisée for ten consecutive days. At the end of this period of time the medication is suspended for five days, then resumed during ten days, and so on for several months.

Salvarsan and Venous Thrombosis

On March 31, Dr. Darier, physician of the hospitals of Paris, read, before the Société médicale des hôpitaux, a paper by himself and M. Cottenot, on a series of observations which showed that thrombosis, which is sometimes observed after venous injection of salvarsan, is due to the hyperalkalinity of the solution, and that alkaline solutions of this drug are injurious to the red blood-corpuscles. One should, therefore, inject into the veins only a faintly alkaline solution prepared at the moment of using and containing an excess of sodium hydroxid only sufficient to prevent the solution from becoming turbid during its injection.

Dr. de Massary reported that he had made three intravenous injections of salvarsan in a woman. Two were made with a faintly alkaline solution; there was no alteration in the veins. The third was made wit ha hyperalkaline solution, and immediately during the injection the veins became indurated and remained so for fifteen days.

According to Dr. Milian, the formation of venous thrombosis is due, not only to the alkalinity of the solution, but also to the degree of dilution. Since he has used very diluted solutions followed by lavage of the wall of the vein with injected physiologic serum, he has not observed a single case of thrombosis.

The Name of Malta Fever

The discussion previously mentioned in THE JOURNAL (THE JOURNAL, March 11, 1911, p. 755), and the objections raised to a geographic name have caused the commission of the Académie de médecine to decide that it would be desirable to adopt a name founded on the pathogenesis of the disease. It has consequently adopted the term *mélitococcie*, which implies the idea of infection by a specific microbe common to man and to the lower animals, and which is, at all events, not offensive to any nationality.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 31, 1911.

Personal

On the ninetieth birthday of the prince regent of Bavaria, Prof. v. Müller of Munich received the title of privy court counselor.

Privat-docent Dr. Scheibe of Munich has been called to the chair of otology at Erlangen as the successor of Professor Denker.

Professor Winterstein has been appointed successor to Professor Nagel as director of the physiologic institute at Rostock.

Substitution of Roman Characters for German Script

The committee on petitions of the Reichstag has referred to the imperial chancellor a communication asking for official permission to substitute the Roman characters for the German script and gothic letters. The petition sets forth that it would be desirable for Germany to take this step which other nations took long ago. The angular so-called German script is not to be entirely suppressed, but the gothic characters are to be limited to ornamental printing, and it shall be taught in the third or fourth school year, so that pupils may be able to read it, but not be taught to write it. Against this proposition a great storm is rising, in which patriotism expresses itself in the preference for the German script. The argument is raised that for national reasons, the script used in Germany for hundreds of years should not be rejected. If, however, it is asserted that the angular letters are especially adapted to the words of the German language and that for this reason the public should not be deprived of them, it is sufficient to reply that in medical literature for decades the Roman characters have been employed almost exclusively for printing without a single physician making any objection to them.

The Third International Congress of Laryngology and Rhinology

While many congresses will meet this year in Dresden on account of the international exposition of hygiene, the third international congress of laryngology and rhinology will hold its meeting in the latter part of August in Berlin. At its head is the senior of the laryngologists, Prof. B. Fraenkel. I suppose that Professor Fraenkel retains his position only for the reason that he wishes to preside over the congress as an active professor; otherwise he would already have determined on account of his health to resign his office. Already 600 specialists from all civilized countries have announced their intention to be present at the congress. Representatives of the imperial and state authorities belong to the honorary committee. The municipal authorities of Berlin have appropriated $2,000 (8,000 marks) for the social features of the meeting.

A Motherhood Fund

In the small manufacturing city of Sebnitz in the so-called Switzerland of Saxony there has lately been created a local association to assist mothers. The occasion of this was the fact that in spite of the introduction of nursing premiums, only 55 per cent. of the women nursed their children and the infant mortality amounted to 20 per cent. All women living in the city may apply to the association if their own income or that of their family does not exceed $475 (1,900 marks) yearly. Membership once obtained does not expire until the income amounts to more than $600 (2,500 marks). The members pay a monthly fee of 12 cents (50 pfennigs) and receive in return the following assistance after childbirth: If the membership has continued for a year the fund pays back the monthly fees, $1.50 (6 marks), and adds $3.50 (14 marks) as lying-in money; two years' membership entitles one to $3.00 return fees and $4.50 lying-in money; three years' membership affords $4.50 and $5.50; that is, a lying-in woman who has belonged to the club three years receives from it $10 (40 marks). On the birth of twins an addition of $2.50 (10 marks) is paid. If the child dies during the first week or is born dead, only the fees are returned. If the mother dies, the child or the father of a legitimate child may claim the complete amount. Needy nursing mothers who belong to the club are entitled, in addition to the lying-in money, to a liter of milk daily for the improvement of their own nutrition.

Miscellany

A Bill to Establish a Department of Health, and for Other Purposes

Senator Owen, on April 6, introduced Senate Bill 1, to take the place of S. B. 6049, introduced by him at the last session of Congress. The bill follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

Sec. 1. That there be at the seat of government an executive department known as the Department of Health, and a Director of Health, who shall be the head thereof; and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Director of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of $——— *per annum* and with tenure of office like that of the heads of the other executive departments. And said director shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

Sec. 2. That there be in the Department of Health an assistant to the Director of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure of the President, and who shall receive a salary of $——— *per annum*. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Director of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The auditor for the state and other departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Director of Health.

Sec. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health and to collect and disseminate information relating thereto: *Provided*, That this act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the state, any function belonging exclusively to such state, or to enter any premises in any state without the consent of the owner or occupant thereof; but the Director of Health, on request of the chief executive or other proper authority of any state, territory, the District of Columbia or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such state, territory, district or insular possession in protecting and promoting the health of the people of such jurisdiction: *And provided further*, That the Department of Health shall recognize no so-called school or system of medicine.

Sec. 4. That to the Department of Health are hereby transferred the following bureaus, divisions and other branches of the government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Director of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health and Marine-Hospital Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs and liquors, and with the execution and enforcement of the act of Congress entitled "An act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time, either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which such bureau, division or other branch of the government is transferred, shall, to the extent to which such function, authority, power, duty or jurisdiction pertains to such bureau, division or other branch of the government, immediately on such transfer become vested and thereafter remain vested in the Director of Health.

All land, buildings, furniture, apparatus, equipment and property of whatsoever description, and all official records and papers, in the custody of any executive department from which any bureau, division or other branch of the government is transferred as aforesaid and pertaining to the business of such transferred bureau, division or other branch of the government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division or other branch of the government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

Sec. 5. That within the Department of Health there shall be the following bureaus: (a) Bureau of Sanitary Research; (b) Bureau of Child Hygiene; (c) Bureau of Vital Statistics and Publications; (d) Bureau of Foods and Drugs; (e) Bureau of Quarantine; (f) Bureau of Sanitary Engineering; (g) Bureau of Government Hospitals; (h) Bureau of Personnel and Accounts. And the Director of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records and property, and the work, resources, and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and offices thereof as to said director seems proper; but in arranging and rearranging the personnel, the rank, pay and allowances of the officers of the Public Health and Marine-Hospital Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this act contained, be diminished. And the Director of Health may call on the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

Sec. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the government for duty under the Director of Health when so requested by said director, and to detail officers and employees in the service of the Department of Health to any of the other executive departments on request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect the purpose and intent of this act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

Sec. 7. That the Director of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him on his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of matters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed, except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this act the advisory board for the Hygienic Laboratory created by section five of an act entitled "An act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July 1, 1902, be, and the same hereby is, abolished.

Sec. 8. That the Director of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the states, territories, the District of Columbia and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Director of Health, on the written application of the duly constituted health authorities of not less than five states, territories, the District of Columbia or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the states, territories, the District of Columbia and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference; but every state, territory, the District of Columbia and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and participating in its proceedings. And from and after the passage of this act annual and other conferences of state and territorial boards of health, quarantine authorities and state health officers, provided for by section seven of an act entitled "An act to increase the efficiency and change the name of the United States Public Health and Marine-Hospital Service," approved July 1, 1902, be, and the same are hereby, abolished.

Sec. 9. That, except as expressly provided in this act, nothing herein contained shall be construed as limiting or abrogating any function, right or duty imposed by law on any existing bureau, division or other branch of the government; but such bureaus, divisions and other branches of the government as are by this act or by authority thereof transferred to the Department of Health shall continue, under direction of the Director of Health, to have such functions, duties and rights as they have at the time of such transfer; and in the case of such bureaus, divisions and other agencies of the government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

Sec. 10. That the Director of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either House of Congress, and such as are in his judgment necessary or expedient.

Sec. 11. That $——— be, and the same are hereby, appropriated to carry into effect the provisions of this act, out of any money in the Treasury not otherwise appropriated.

Sec. 12. That all acts and parts of acts contrary to the provisions of this act or inconsistent therewith be, and the same are hereby, repealed.

Sec. 13. That this act shall take effect on and after July 1, 1912.

Cystic Disease of the Breast with Carcinoma.—It is difficult to estimate the exact etiologic relation that the presence of a cyst bears to the formation of a carcinoma, but the association of the one with the other is sufficiently common to justify the routine removal of such cysts.—H. M. Rigby, in the *Practitioner*.

Deaths

Leartus Connor, M.D., one of the distinguished ophthalmologists of the middle west, a leader in medical education, and in the uplift of the medical profession, died at his home in Detroit, April 16, from cerebral hemorrhage, aged 68.

Dr. Connor was a native of Coldenham, N.Y., took his academic course at Williams College, and his medical course at the College of Physicians and Surgeons, New York City, from which he graduated in 1870. In 1871, he located in Detroit and at once began his work as a medical teacher as lecturer on chemistry in Detroit Medical College. From 1872 to 1879, he was professor of physiology and clinical medicine; from 1878 to 1881, professor of didactic and clinical ophthalmology and otology, and from 1875 to 1881, secretary of the college. In 1871, Dr. Connor became editor of the *Detroit Review of Medicine and Pharmacy* and continued as its editor through its various changes of name to the *Detroit Medical Journal*, *Detroit Lancet*, and *American Lancet*, his editorial work continuing until 1895.

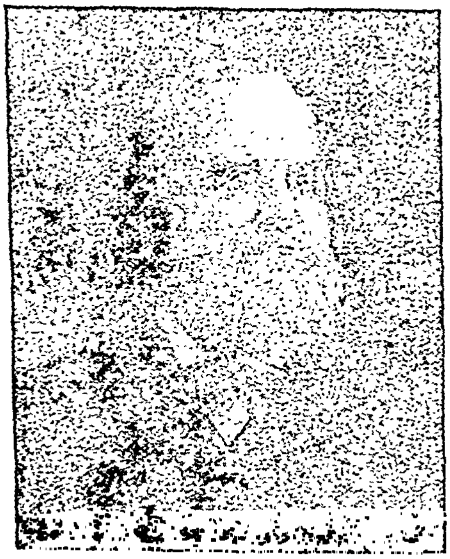
He was an active and prominent member of the American Medical Association for many years, was second vice-president in 1882, a member of the original board of trustees appointed in the same year, a trustee in 1887-8, and again in 1892-3, and chairman of the Section on Ophthalmology in 1891. He was president of the Michigan State Medical Society in 1901-2, and chairman of its council from 1902 to 1905; president of the Detroit Academy of Medicine, 1877-8 and 1888-9, and its secretary 1871-2; secretary of the American Medical College Association; and president of the American Academy of Medicine and of the American Medical Editors' Association, 1883-4.

He was attending physician for several years to St. Mary's Hospital, ophthalmic and aural surgeon to Harper Hospital since 1881, and to the Detroit Children's Free Hospital since 1887, and was consulting ophthalmologist to the Woman's Hospital, from 1881 to 1890.

A testimonial dinner was given to Dr. Connor by his colleagues in Detroit, February 25, in honor of the completion of his fortieth year in practice.

Wayne County Medical Society at its regular meeting April 17, adopted resolutions of eulogy and sympathy, and adjourned without taking up the program for the evening. Funeral services were held April 18.

In addition to his editorial work, Dr. Connor made many valuable contributions to the literature of ophthalmology. He was largely responsible for the activity displayed by various associations in the regulation of the teaching of ophthalmology in the colleges so that every practitioner would have the ability to refract correctly and render the service to his patients which the optometrist is trying to render. Dr. Connor was a loyal friend, and an enemy who always fought fairly; no one ever questioned his good faith. His precept and example were an inspiration to his younger confrères, and his death will be lamented, not only by them, but by his many friends throughout the United States.



LEARTUS CONNOR, 1843-1911

Charles Augustus Oliver, an ophthalmologist of international repute, died at his home in Philadelphia, April 8, from uremia, aged 57. He was a native of Cincinnati, but went to Philadelphia when a child, pursued his medical studies at the University of Pennsylvania and was graduated from the medical department of that institution in 1876. He was a member of the American Medical Association, American Association for the Advancement of Science, American Philosophical Society, and American Ophthalmological Society, and was an active, honorary or corresponding member of many other medical and scientific societies in this country and abroad. He was attending surgeon to the Wills Eye Hospital, ophthalmologist to the Presbyterian Hospital, and consulting ophthalmologist to the Friends' Hospital for the Insane and the State Hospital for the Chronic Insane. He was a prolific writer on his specialty, co-author with Dr. Norris of the "Textbook of Ophthalmology," and author of several books and monographs on ophthalmology. He was a fellow of the Philadelphia College of Physicians and founder of the Wills Eye Hospital Ophthalmic Society. He was made associate clinical professor of ophthalmology in the Woman's Medical College of Pennsylvania, Philadelphia, in 1897, and later on was made clinical professor in that institution. Dr. Oliver had suffered from nephritis about three years.

Albert Rufus Baker, M.D. Western Reserve University, Cleveland, 1879; a member of the American Medical Association, and chairman of the Section on Ophthalmology in 1893-4; professor of ophthalmology, otology and laryngology since 1888 in the Cleveland College of Physicians and Surgeons, and chairman of the faculty from 1898 to 1902; oculist and aurist to St. Alexis and Cleveland General Hospitals; expert on the local board of U. S. Pension Examining Surgeons; president of the Association of American Medical Colleges in 1900-01 and of the Cuyahoga County Medical Society; a fellow of the American Academy of Medicine; editor of the *Cleveland Medical Gazette* from 1885 to 1896; died at his home in Cleveland, April 5, aged 53.

John H. Janeway, M.D. University of Pennsylvania, Philadelphia, 1852; Colonel Medical Corps, U. S. Army, retired, died in the Kenilworth, (Ill.) Sanitarium, April 14, from paralysis, aged 82. Dr. Janeway entered the Medical Corps of the Army in 1861, and served throughout the Civil War, being brevetted major and lieutenant colonel for gallantry. He was retired with the rank of lieutenant colonel on account of age, August 12, 1893, and afterward made his home with his son in Chicago and Kenilworth. He had been disabled for several years on account of cerebral hemorrhage.

Thomas B. Hart, M.D. College of Physicians and Surgeons, Chicago, 1894; a member of the American Medical Association; formerly a practitioner of Mount Etna, Ind.; medical superintendent of the New Mexico Miners' Hospital; president of the New Mexico Medical Association; vice-president of the New Mexico Board of Health; health officer of Colfax County; city physician of Raton, assistant local surgeon of the Santa Fe System; and president of the local board of pension examiners; died at his home in Raton, April 5, aged 46.

Chester West Stranahan, M.D. University of Buffalo, N. Y., 1863; Jefferson Medical College, 1867; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; surgeon in charge of St. Vincent's Hospital, Warren, from 1892 to 1902; local surgeon of the Lake Shore and Michigan Southern Railway Company; died at his home in Erie, April 6, from paralysis, following a cerebral hemorrhage four years before; aged 65.

Byron Frank Porter, M.D. Medical School of Maine, Brunswick, 1850; a member of the Maine Medical Association; in 1885 and 1886, a member of the Maine legislature; for fifteen years supervisor of schools, and for many years United States pension examiner; said to have been the oldest practitioner in the state; died at his home in Newport, April 6, from senile debility, aged 82.

Noah M. Glatfelter, M.D. University of Pennsylvania, Philadelphia, 1864; for three years a surgeon of volunteers during the Civil War; well known as a horticulturist and botanist and a recognized authority on willow culture and the culture of mushrooms; died at his home in St. Louis, April 2, from the results of injuries received in a fall two days before, aged 73.

Charles Hadley Spinning (license, Washington, 1881); a graduate of the Eclectic Medical Institute, Cincinnati, in the late forties; twice a member of the Washington state legislature, and once state senator; for nine years physician to the Puyallup Indian Agency; for many years a practitioner of Tacoma; died at his old home in Prosser, April 1, aged 90.

Theodore A. Wagner, M.D. Indiana Medical College, Indianapolis, 1876; a member of the Indiana State Medical Association; a member of the consulting staff of the Indianapolis City

Hospital; once coroner of Marion County, and chairman of the mayor's advisory committee; died in St. Vincent's Hospital, Indianapolis, April 9, from cerebral hemorrhage, aged 62.

Alexander Arthur McLarty, M.D. Detroit College of Medicine, 1893; of Manistee; a member of the Michigan State Medical Society; supreme examiner of the Modern Romans; acting assistant surgeon U. S. P. H. and M.-H. Service; died at St. Mary's Hospital, Rochester, Minn., March 27, after an operation for carcinoma of the stomach, aged 43.

Frank D. Putnam, M.D. Bellevue Hospital Medical College, 1875; a member of the American Medical Association; formerly president of the Cayuga County Medical Society; city physician of Auburn, N. Y.; died in the Auburn City Hospital, April 5, two days after an operation for the removal of gallstones, aged 59.

Richard W. Ivers, M.D. Baltimore (Md.) Medical College, 1895; a member of the Connecticut State Medical Society; for several years a member of the staff of the Emergency Hospital, Bridgeport, Conn.; for three years chief surgeon of the Barnum and Bailey circus; died at his home in Middletown, Conn., April 2, aged 40.

John Ligon, M.D. University of Virginia, Charlottesville, 1868; surgeon of the Nineteenth Virginia Cavalry, C. S. A., during the Civil War; for many years a member and president of the Pocahontas County (W. Va.) Court; died at his home in Clover Lick, April 3, from cerebral hemorrhage, aged 77.

Ethan P. Allen, M.D. Rush Medical College, 1866; a veteran of the Civil War; for more than twenty years a practitioner of Stillman Valley, Ill., but later of Rockford; physician of Winnebago County; died at the Ransom Sanitarium in that city, April 6, from cerebral hemorrhage, aged 70.

George A. Doss, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1901; president of the state eclectic association in 1908; professor of specific medication and diagnosis in the Hospital Medical College (Eclectic) Atlanta; died in a sanitarium in that city, April 2, aged 34.

Henry Clay Perry, M.D. Rush Medical College, 1857; acting assistant surgeon in the Army during the Civil War; and thereafter a resident of Ord, Neb.; several times mayor, and for many years supervisor of the city; died in San Diego, Cal., February 2, from heart disease, aged 77.

Caroline M. Stengel, M.D. Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1893; of Santa Clara, N. Y.; a member of the Woman's Medical Association of New York City; died in Hoboken, N. J., Oct. 23, 1910, from tuberculosis.

Henry E. Cassel, M.D. University of Minnesota, Minneapolis, 1884; a member of the American Medical Association; director and chief surgeon of the Litchfield (Minn.) Hospital; died in Luther Hospital, St. Paul, April 4, from septicemia, due to an operation wound, aged 51.

Alexander Werth, M.D. University of Berlin, Germany, 1860; a veteran of the Civil War; and afterward United States pension examiner in St. Louis; died at his home in that city, April 7, from septicemia, following an amputation of the leg above the knee, aged 70.

Albertus Adair Moore, M.D. New York University, New York City, 1859; a member of the South Carolina Medical Association; and formerly a member of the State Board of Health; died at his home in Camden, Nov. 26, 1910, from arteriosclerosis, aged 76.

William C. Mason, M.D. Howard University, Washington, D. C., 1884; formerly of Indianapolis; for thirty years a medical examiner of the Pension Office, Washington, D. C.; a veteran of the Civil War; died at his home in Washington, March 28, aged 65.

William Henry DeCourcy, M.D. New York, 183—; of Cheston-on-the-Wye, Queen Anne's County, Md.; who gave up practice after a short time to look after his estate in Maryland; died at Johns Hopkins Hospital, Baltimore, April 5, from senile debility, aged 87.

John David Carnahan, M.D. University of Virginia, Charlottesville, 1872; a member of the Medical Society of Virginia; a pioneer practitioner of Ogden, Utah; and a Confederate veteran; died at his home in Ogden, April 2, from septicemia, aged 63.

Robert A. Walker, M.D. College of Physicians and Surgeons, Baltimore, 1882; a member of the Medical Society of the State of Pennsylvania; of Rockville; died at the home of his sister in Wilkinsburg, March 29, from cancer of the intestines, aged 54.

Charles Foster Gardner, M.D. Syracuse (N. Y.) University, 1898; of Westhampton Beach; a member of the Medical Society of the State of New York; died in Roosevelt Hospital, Manhattan, March 31, after an operation, from septicemia, aged 38.

John F. Hutchins, M.D. Texas Medical College, Galveston, 1868; Tulane University, New Orleans, 1868; a member of the American Medical Association, and a Confederate veteran; died at his home in Oakland, Tex., Dec. 5, 1910, aged 69.

Richard Kuehne, Jr., M.D. Long Island College Hospital, Brooklyn, N. Y., 1904; of West Hoboken; a member of the Medical Society of New Jersey; died in Nassau, Bahama Islands, June 16, 1910, from chronic nephritis, aged 27.

George S. Luck, M.D. Washington University, Baltimore, 1873; a Confederate veteran, and a member of the Roanoke (Va.) Academy of Medicine; died at his home in that city, March 19, from cerebral hemorrhage, aged 64.

Herman T. Wolff, M.D. University of Halle, Germany, 1878; of San Antonio, Tex.; died in Baylor Hospital in that city, April 1, from the effect of morphin, self-administered, it is believed with suicidal intent, aged 59.

Russell J. Dimon, M.D. Albany (N. Y.) Medical College, 1883; formerly a member of the Medical Society of the State of New York; of Hastings; died at the Hospital of the Good Shepard, Syracuse, March 28, aged 58.

Isaac Franklin Noel, M.D. American Medical College, Eclectic, St. Louis, 1881; a member of the Missouri State Medical Association; died suddenly in his office in Unionville, April 4, from cerebral hemorrhage, aged 53.

Mahlon Kohler Mathus, M.D. Missouri Medical College, St. Louis, 1855; a resident of Sangamon County Ill., for sixty-five years; died at his home in Williamsville, March 22, from cerebral hemorrhage, aged 86.

Agnes Christy Patterson, M.D. Boston University School of Medicine, 1900; of Malden, Mass.; died in the Massachusetts Homeopathic Hospital, Boston, March 20, after an operation for gastric ulcer, aged 48.

Ranny Phelps Malay, M.D. University of Alabama, Mobile, 1884; a member of the South Dakota State Medical Association; died at his home in Aberdeen, April 4, from pneumonia, aged 51.

Emile Laurent Marie Tilley, M.D. University of Tennessee, Nashville, 1886; of Kaplan, La.; died in St. Mary's Hospital, Patterson, La., Dec. 21, 1910, from carcinoma of the stomach, aged 49.

Jacob Rohrer Johns, M.D. Jefferson Medical College, 1889; for many years a practitioner of Chadd's Ford, Pa.; died at his home in Philadelphia, April 6, from locomotor ataxia, aged 49.

Jared E. Brooke, M.D. Indiana Central Medical College, Greencastle, 1851; a surgeon of volunteers during the Civil War; died at his home in Plymouth, Ind., March 31, aged 91.

James M. Brittain, M.D. Missouri Medical College, St. Louis, 1873; a Confederate veteran; and a pioneer citizen of Jacksonville, Tex.; died at his home in that place, April 2, aged 80.

Louis A. McCord, M.D. St. Louis College of Physicians and Surgeons, 1892; of Cristoval, Tex.; was shot and killed in San Angelo, Tex., in a feud fight, March 31, aged 45.

Simon M. Brainin, M.D. University of Dorpat, Russia, 1881; a member of the Medical Society of the State of New York; died at his home in New York City, March 31, from chronic nephritis, aged 56.

John Washington Steel, M.D. Eclectic Medical Institute, Cincinnati, 1857; died at his home in Shelbyville, Tenn., February 7, from cirrhosis of the liver, aged 80.

Albert Badger, M.D. New Orleans, 184—; for nearly seventy years a practitioner of Missouri; died at his home in Schell City, March 14, from senile debility, aged 89.

Lafayette Washington Herrington, M.D. Kentucky School of Medicine, Louisville, 1893; died at his home in Rawson, O., Dec. 29, 1910, from pneumonia, aged 75.

Warren W. Bowles (license, Kansas, 1901); for thirty-five years a practitioner of Bunker Hill; was killed in a runaway accident near Luray, April 5, aged 71.

James Cress, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1862; died at his home in North Georgetown, O., April 2, from pneumonia, aged 80.

Joseph Smillie, M.D. University of Toronto, Ont., 1901; died at his home in Binbrooke, Ont., July 30, 1910, from cystic tumor of the cerebellum, aged 37.

Aubry Linton Mahon, M.D. College of Physicians and Surgeons, Memphis, Tenn., 1909; died at his home in Gould, Ark., March 30, from nephritis, aged 26.

Charles Oliver Sumner, M.D. Kansas City (Mo.) Medical College, 1885; died at his home in Alma, Colo., January 19, from pleuropneumonia, aged 53.

Hiram W. Harding, M.D. University of Maryland, Baltimore, 1860; a Confederate veteran; died at his home at Wicomico Church, Va., March 24, aged 73.

Claude Fowler Hickman, M.D. Chattanooga (Tenn.) Medical College, 1908; died at his home in Bristol, Va., April 7, from tuberculosis, aged 26.

Marriages

BEN PARMENTER, M.D., to Miss Ethel Brumfield, both of Bellmont, Ill., April 1.

WILLIAM K. CHATTLE, M.D., to Miss Eva Mae Haus, both of St. Louis, March 4.

CARL WILLIAM WAHRER, M.D., to Miss Julia McConn, both of Fort Madison, Ia., April 8.

FRANK R. SPENCER, M.D., Boulder, Colo., to Miss Edith Clayton of Kankakee, Ill., April 5.

STANLEY E. KERRICK, M.D., to Miss Winifred Thompson, both of Minneapolis, April 18.

SCOTT DUDLEY BRECKINRIDGE, M.D., to Miss Gertrude Ashby Bayne of Washington, D. C., April 19.

PHILIP F. HEROD, M.D., Alva, Okla., to Miss Ruby Kelley of Kansas City, Mo., at El Reno, Okla., March 31.

WILLIAM G. PRUYN, M.D., Mexico City, Mex., to Miss Bessie Rea of San Francisco, at Mexico City, March 30.

Conservative Surgery of Trees.—Trees, like human beings, may have their lives and usefulness extended by intelligent medical treatment or by conservative surgery; indeed, the analogy, when one comes to think about it, is striking. In addition to conditions which must be treated surgically, they are subject to various diseases, due mostly to insect parasites. When these parasites attack leaves or bark, the trees may be said to be treated medically, as in the use of sprays for the eradication of scale or other insects. Trees are also affected by under-nourishment and are subject to traumatisms and decay. In their capacity of furnishing wholesome foods, in their chemical activity in utilizing carbonic acid gas and giving off oxygen, in affording protection from the heat of the sun, as well as by appealing to our esthetic sense, trees have a distinct influence on the health and happiness of the people. They are therefore worthy of care. In treating pathologic conditions in trees many principles apply that are applicable to treatment of human beings. In the case of infesting parasites, parasiticides and disinfectants are used. In the conditions requiring surgery, which constitute perhaps the larger proportion of tree ills, almost the same surgical principles apply. A broken limb may be put in splints, a limb torn or broken off may be bandaged with protective material to exclude decay. Transplantation of twigs or branches may be done, as in grafting or budding, and more formidable injuries or large areas of decay may be healed by still more radical surgery. The tree surgeon must understand thoroughly tree anatomy and tree nature, and must take into consideration the mechanical effect of winds, etc. When large areas of decay are present in limb or trunk, this decay must be thoroughly eradicated, just as the dentist or the surgeon cleans out carious teeth or bone; a species of asepsis or antisepsis must be observed to kill off the factors causing decay, and then the cavities must be filled with some material impervious to moisture and which will support a possibly greatly weakened trunk or limb. As a filling material, cement, along with its other numerous uses, has been found to be one of the best. A tree thus carefully treated, either medically or surgically, responds marvelously, and its life may be saved and its existence greatly extended. Considerable cavities thus filled with cement often heal and are even covered over with bark, leaving only a scar, just as surface wounds in animal life are covered with protecting epithelium.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

EIGHTEENTH CENTURY MATERIA MEDICA

The changes that have taken place in medical thought and practice within the last two hundred years are nowhere more evident than in that branch of medicine dealing with therapeutic agents—materia medica. It is both interesting and instructive to compare the present status of certain drugs which we now recognize as some of the most useful in the physician's armamentarium, with the standing of the same medicaments two hundred years ago.

Herman Boerhaave, a Dutch physician, born in 1668, stood, in his day, in the vanguard of the medical profession. In 1709, he became professor of medicine and botany at the University of Leyden, having previously held the position of lecturer on the theory of medicine in the same institution. It is said that Boerhaave's reputation was so high that, at one time, he received a letter from a Chinese mandarin addressed: "To Boerhaave, Physician in Europe."

It may be fairly admitted that Boerhaave's statements on the drugs in use in his day are representative of his time. For this reason the following quotations take on an added interest. In 1775 a small book was published by one Richard Goade, a London druggist, entitled "Boerhaave's Materia Medica, or the Druggist's Guide, and the Physician and Apothecary's Table-Book." Goade says, in his preface, that his book is but "a Translation of a Latin Manuscript which was given to me by Dr. James Carroll, taken from the Mouth of the great Professor Boerhaave, in a Course of Lectures."

The few quotations which are here given have been selected chiefly because of the comparative importance of the drugs and partly because of the change that has taken place in the medical profession's estimate of their medicinal value. Except that the modern form of the letter "s" has been substituted for that which appears in Goade's work, the composition and spelling have been closely followed:

ARGENTUM. *Silver.* A Metal well known in common Use, but little in Medicine. It is found pure and native in the Earth in some Places; in others mixed with the Ores of Lead, and other mineral Substances; beaten into Leaves, it is used to cover Boluses. The Preparations from it are the Chrystals made by setting a strong Solution of it to chrystalize; and the Lunar Caustic made from an evaporated Solution of the same Metal, or from the melted Chrystals. Both are Caustics but they are little used.

A Solution of Silver in Aqua Fortis, stains Agate: The Figures made by Art in those Stones are done by covering the Surface with Wax, cutting the intended Figure through the Wax, and pouring on the Solution, which penetrates into the Stone.

ARGENTUM VIVUM. *Quicksilver.* A fluid Semi-Metal, found sometimes native and pure, oftener in Form of Cinnabar or other Ores. Factitious Cinnabar is an artificial Mixture of Sulphur and Quicksilver; Native Cinnabar is a natural Mixture of the same Ingredients. We have it from Spain, Hungary, and the East, and also the Quicksilver Native or obtained from it.

Taken in its crude or native State is excellent against Obstructions, an Ounce or two for a Dose: Large Quantities are sometimes given in obstinate Obstructions of the Bowels, but it is a desperate Practice. Externally mixed into Ointments it cures the Itch, and other cutaneous Foulnesses; and will raise Salivation.

The Preparations of it kept in the Shops, are numerous and of great Virtue. Factitious Cinnabar, made by subliming Quicksilver and Sulphur. Æthiops Mineral, by grinding Quicksilver and Sulphur together. Corrosive Sublimate, made by subliming Quicksilver Nitre, Vitriol, and Sea-salt. Mercurius Dulcis or Calomel, made by subliming several Times Crude Mercury and Corrosive Sublimate. Calcined Mercury, made by keeping

Quicksilver *over a small Fire till* it becomes a reddish Powder. White Precipitate, made by dissolving Corrosive Sublimate and Sal Ammoniac in Water, and precipitating with Oil of Tartar. What is called Red Precipitate, made by evaporating a Solution of Quicksilver in Aqua Fortis: And Turpeth Minerale, made by evaporating a Solution of Quicksilver in Oil of Vitriol, and pouring on Water. All these are powerful Medicines, but they must be *given* with Caution.

Crude Quicksilver for internal Use should be reduced from Cinnabar; and Sophistications are so common, every one ought to do it for himself.

ARSENICUM. *Arsenick.* A Chemical Preparation made in Germany, and kept by our Druggists. It is properly the Flowers of Cobalt, a poisonous Mineral found in many Parts of *Europe*, and affording also the fine blue Substance called Smalt. The Cobalt is burnt in a reverberatory Furnace, and the Flowers or Soot collected from its long Chimney, make Arsenic. From the Remainder of the Cobalt, Smalt is made, by adding Sand and Pot-ash, and running all into a Kind of Glass of a deep Blue.

The Soot of the Cobalt sublimed alone, makes the common White Arsenick; Yellow Arsenick is made by adding Sulphur to the Soot before Sublimation, and the Red by adding Sulphur and the Scoriae of Copper.

They are all Poisons, and of no Use whatsoever in Medicine: The Deaths that have been occasioned by them, should incur a severe Penalty on whosoever sold or kept them.

DIGITALIS. *Fox-Glove.* A wild Herb brought entire to the Markets. It is a Yard high, and has large red Flowers.

The fresh Leaves given in Infusion, are a rough Vomit, but it is not used except by the Country People.

An Ointment made of the Flowers boiled in Lard, has been supposed to have great Virtues against Piles: but it is not in much Esteem at present, except amongst the good Women.

GENTIANÆ RADIX. *Gentian Root.* A Long, thick Root of a yellowish brown Colour, with little Smell, but very bitter to the Taste. We have it from Germany, where they dry some in the open Air and some in Ovens. The latter Kind is worst, 'tis too dry, brittle, and often burnt. The Plant which produces it is common in our Gardens, and has large broad Leaves and little blue Flowers.

It is an excellent Stomachick, with Orange Peel and a little Galangal *it makes an* excellent bitter Infusion in Wine or Water.

IPECACUANHA. *Indian Root.* Two Kinds of Ipecacuanha are imported, a brown and a grey; but as the grey is the Kind that ought to be used, 'tis Pity the other is brought over. Both are from the Spanish West-Indies. The grey or right Ipecacuanha is long slender, twisted and annulated; greyish on the Surface, and paler within; the Brown is smaller; it is of a deep brown on the Surface, and white within. The grey has not much Smell, this has less; the Taste of both is disagree*able.* The Plant to which we owe the one, affords also the other: the only Difference is, that the brown is starved, the grey grows in a rich Soil. The Plant is ten Inches high, and has a few Leaves at the Top only, the Flowers are white, and are succeeded by Berries.

The Root is the best Emetick we *know, and* is *almost* the only Medicine used at this Time for that purpose. It has also a great Astringency, and taken for a Length of Time in small Doses, cures Dysenteries.

NUX VOMICA. *The Vomic Nut.* A rounded flat Fruit of the Breadth of a Shilling, striated, tough and of a whitish Colour, and of an horribly acrid bitterish Taste. We have it from the East-Indies. The Tree which produces it is large and beautiful. Its Fruit is of the Bigness, Shape and Colour of an Orange, and in each there are about fifteen Kernels, which are these Nuces Vomicæ.

They are used as a Poison for Animals. They have been *recommended* however, in small Doses internally as a Medicine, but we have seen ill Consequences attend them, and we have so many safe Medicines for the same Purposes, that it is rash to use them.

SABINA. *Savin.* The young Branches with the Leaves of the Garden Shrub of this Name, brought fresh to Market. The Leaves are little, of a bright Green, and terminates in *Prickles.*

It is *famous* for a Promoter of the Menses and it will cause Abortion; but great Danger as well as Guilt attends the Use of it to such Purposes: Many have *perished* by it.

SARSAPARILLÆ RADIX. *Sarsaparilla Root.* A Root brought over in long slender Pieces, which are usually split, and have the inner Part taken out, before they are sold for Use. When entire, the Root consists of a Head of the Bigness of a Walnut, from whence these Strings or Fibres grow in great Numbers, and to a great Length, but the Fibres only are used. They are of a greyish Colour on the Outside, and white within, of no Smell, and but little Taste. We have it from South America. The Plant is one of the prickly Bindweeds.

It is esteemed a great Sweetener of the Blood, a Sudorifick and Attenuant. It was once pretended to be a remedy for the Pox.

SENA. *Sena.* The Leaves of a small Shrub, but so carelessly collected, that we find Fragments of the Stalks and the Seed-Vessels among them. They are oblong, sharp-pointed, of a pale Green, fleshy, of little Smell, but of a Mawkish, unpleasant Taste. This is the Alexandrian Sena, the only Kind that should be kept. There are two other Kinds, one from Tripoly, with greener and blunter Leaves; another from Mocha, the Leaves of which are long and narrow. They have all the same Virtues, but the Alexandrian is greatly to be preferred. The Leaves are alated, and the Flowers are like Pea-Blossoms, but yellow streaked with purple.

Sena is an excellent gentle Purge: There have been many Ways invented to disguise its Taste, but none is so well as the old Womens Method of stewing it with Prunes, which also assist it in its Operation.

TOLUTANUM BALSAMUM. *Balsam of Tolu.* A Resin of the Consistence of thick Honey, of a brownish Colour, of a very fragrant Smell, and of an acrid Aromatick Taste. We have it from New Spain, in Shells of Gourds. It is thin when first put up, but thickens in keeping. The Tree which affords it, is a small Pine, frequent in South America.

It is an excellent Balsam in Consumption; for it is less acrid than any of the others; It has also their Virtues of a Detergent and Diuretick.

State Laws Against Drug Adulteration

The federal authorities, since the passage of the National Food and Drugs Act, have done much to improve the quality of drugs on the market. This law, however, being a federal one, applies only to goods shipped from *one* state to another, an *spurious or adulterated drugs may* be *manufactured* in a stat and shipped to, and exposed for sale in, all parts of the state and yet be entirely without the province of the federa authorities. Such adulteration is entirely a matter for th state authorities to correct. Unfortunately, the individual states as a rule, have not had efficient laws or the laws have been a dead letter. Conditions are changing, however, and such states as North Dakota, Massachusetts, Pennsylvania, New York and a few others are giving evidence that efforts are being made to check the traffic in adulterated drugs. We have before us a circular which indicates that Kentucky is one of the states that not only has a law for the regulation of the sale of medicines but is seriously concerned with its enforcement. The circular shows that Kentucky is concerned not only with the prosecution of offenders against the law but also takes the broader view and proposes also to combat the evil by educational methods. Thus it says:

> Two years' work under the Kentucky Food and Drugs Act has convinced those engaged in the enforcement of the drug sections of that act that there are two classes of adulterations: first, adulterations due to willful intent or gross carelessness; second, adulterations due to various trade and professional problems, which this office believes can be better overcome through mutual assistance rather than prosecution.

For the seminar the following comprehensive *program* is proposed:

> (*a*) The general application *of the state* and federal pure-food laws for the drug business. (*b*) The drug regulations and notices of judgment under the federal law. (*c*) The regulations under the state law. (*d*) *The proper* labeling of patent and *proprietary* medicines under the law. (*e*) The proper labeling of U. S. P. and National Formulary products under the law. (*f*) Necessary equipment for a druggist's laboratory. (*g*) Drug store *management* and equipment. (*h*) Problems connected with the preparation, storage and handling of various pharmaceutical preparations. (*i*) *Standard* weights and measures. (*j*) The soda fountain. (*k*) Other similar subjects.

It is to be hoped that the pharmacists of Kentucky will avail themselves of the opportunity thus offered.

Correspondence

A Case of Near Blackmail

To the Editor:—It is seldom that the publisher of one of the popular magazines comes as near placing himself in the position of being accused of blackmail, as did the publisher of *Good Housekeeping* in its February number. Beneath the heading of the article, "Why Our Glasses Don't Fit," appears a statement which at once leads the reader to suspect that the editor had some misgivings as to the advisability of publishing the article. He must have succeeded in getting the "endorsement of two distinguished oculists" for he says so; and obtaining the distinguished endorsements, he proceeds to publish the article which consists of an assumed case of eye-strain, and the trials and tribulations of a patient—the author—and of an oculist, who with the patience of a Job, as the history relates, makes twenty odd separate and distinct examinations and prescribings of faulty lenses, at which juncture the oculist discovers his trial lenses, and incidentally nearly all other trial lenses in this country and Canada, to be faulty; and all because neither he, nor his brother oculists, as well as various opticians, manufacturing and otherwise, are testing out their trial cases and prescribed lenses by a certain apparatus which "costs sixty dollars"—"possessed by not over fifty opticians and oculists out of 28,000 in the country!" And hereby hangs a tale.

The manufacturer must needs make some sales. The apparatus is not selling well, at least the author makes that inference very strong in the article. Probably he needs the money, and hence this advice to the public: "You can make your oculist a better one by asking him some questions which will worry him. 'Have you yourself tested your trial lenses?' 'Have you a modern axis finder to enable you to test them? And to test also the centering of these lenses I have bought from the optician? Are you sure the man you are sending me to has a machine? If he hasn't why don't you make him get one?'" And now, the manufacturer having had the benefit of this most excellent advertisement, published in the body of a popular magazine, in the form of a most readable and interesting article—and it is interesting—follows up the advertisement by sending out broadcast over the country reprints of the same. "From *Good Housekeeping* Magazine by Permission" accompanied by a picture of the apparatus, and a letter stating among other things, that this is "The Instrument to which Prof. Tassin"—the author of the article—"alludes."

W. H. Dudley, Los Angeles, Cal.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STING OF THE PORTUGUESE MAN-OF-WAR

To the Editor:—Please give me any information you can in regard to the treatment of stings by the Portuguese man-of-war fish. I have had a number of cases on this coast, but have not been able to give much relief. R. S. Lowry, Fort Lauderdale, Fla.

Answer.—Apparently a confusion has arisen between the Portuguese man-of-war fish (*Nomeus gronorii*) and the Portuguese man-of-war (*Physalia pelagica, Physalis pellagica, Holothuria physalis*).

The Portuguese man-of-war fish is closely related to the sergeant fishes. It is of small size and inhabits tropical parts of the Atlantic and Indian oceans. Our species lives commonly under the protection of the Portuguese man-of-war, swimming freely among its poisonous tentacles.

The Portuguese man-of-war is one of the so-called jelly-fish belonging to the *Siphonophora.* It floats on the surface of the water and has long retractile tentacles, sometimes several feet in length, and containing batteries of stinging capsules, powerful enough to sting the hand as severely as a nettle. The greater the number of the cells which sting an individual, the more severe is the pain. A poison has been isolated from *Physalia* by Portier and Richet (1902) under the name of "hypnotoxin." Solutions of this substance killed experimental animals; they became somnolent and death followed through paralysis of the respiration. The intensity of the effects are supposed to depend also on the size of the animal. After removal from water, the stinging property diminishes, but it is reported that the irritative property, unattended, however, by any of the constitutional effects, remains in the tentacles for a long time. Bennett (1831) even reports that in touching a handkerchief some weeks after it had been used in wiping off some of the portions of the tentacles the stinging property was found to have remained, although it had lost its virulent quality, which produced on fresh application violent constitutional symptoms.

Portuguese man-of-war stings are so rarely observed by the average American physician that the following personal experimental experience published by Bennett will doubtless be of interest: "On taking hold of the animal, it raised its tentaculæ and stung me on the second and ring fingers. The sensation was similar at first to that produced by the nettle; but before a few minutes had elapsed, a violent aching pain succeeded, affecting more severely the joints of the fingers, the stinging sensation at the same time continuing at the part first touched. On cold water being applied, with the intention of removing or lessening the pain, it was found rather to increase than to diminish the painful effects. The irritation resulting from the poisonous fluid emitted by the animal extended upward, increasing in extent and severity (apparently acting along the course of the nerves), and in the space of a quarter of an hour the pain in the forearm (which was more particularly referable to the inner part) was very violent, and at the elbow-joint it was still more so. It may be worthy of remark that when the joints became affected the pain always increased. The pain became at last almost unbearable, and was much increased on the affected arm being moved; the pulse of that arm was also much accelerated, and an unnatural heat was felt over its whole surface. The pain extended to the shoulder-joint; and on the pectoral muscle becoming attacked by the same painful sensation, an oppression of breathing was occasioned, which we find produced in a similar manner by rheumatism, when it attacks that muscle; and it proved very distressing during the time it remained. The continuance of the pain was very severe for nearly half an hour, after which it gradually abated, but the after-effects were felt during the remainder of the day in a slight degree of numbness and increased temperature of the arm. . . . About two hours after I had been stung, I perceived that a vesicle had arisen on the spot; and when children have been stung, I have observed that numerous small vesicles arose, similar to those produced by the nettle."

Dr. Clarke Abel describes his own symptoms, mentioning especially "the aching pain in the armpit, accompanied by a sense of restriction within my chest; within fifteen minutes all uneasiness ceased."

It has been very difficult to trace much recent literature of more than very general statements on this subject, and in the articles consulted there is considerable contradiction.

According to popular belief, the sting of *Physalia* may be very dangerous, even resulting in death of a person or of animals, and if certain animals eat *Physalia* their flesh is alleged to become poisonous. These views find both acceptance and denial in medical and scientific writings, and it is difficult to escape the thought that the entire subject of *Siphonophora* stings might well be restudied with profit. Some points of confusion existing in the literature may possibly be traceable to the fact that doubts exist as to the correct zoologic determination of the animal which has produced serious results in certain cases. That the stings of some jelly-fish are insignificant and wear off promptly, so that no medical treatment is necessary, may be readily admitted, but that "no remedy except patience" is called for we are scarcely prepared to admit for those instances in which very severe pain and various other symptoms develop.

Just what treatment would be best we are unprepared to say, for the subject has not been sufficiently studied, and with the exception of Old's (1908) paper, little of a satisfactory nature exists in literature bearing particularly on this phase of the subject. That morphin can be used to relieve the pain is evident, and on general grounds one would be inclined to suggest local alkaline applications as used by Old, provided the case was seen immediately.

One of the most important papers on jelly-fish stings was recently published by Assistant Surgeon E. H. H. Old, U. S. Navy. It is based on nine cases (one fatal) recently observed in the Philippines. The symptoms appeared in from ten minutes to an hour. In four cases there were marked hysterical symptoms, with incessant cough, restlessness, pain and nausea, while in four cases the marked hysterical condition was not present. In treatment, Old used alkaline solution locally and morphin sulphate hypodermatically. The following may be quoted as an example of the cases Old observed:

"V., a hospital attendant at Canacao, on June 21, 1907, while in bathing off the hospital wharf, was stung by a jelly-fish. He said that he was some distance from the landing and as soon as he felt the sting he turned back to the wharf. On his way he felt some pain across his back, but thought it was due to swimming. On his way up from the wharf to the hospital he began to feel badly and sat down for a little while. When he reached the hospital, about thirty minutes after he had been stung, he became prostrated and had to be carried to a bed.

"On arrival I found a slightly raised, vesiculated, red area over the left biceps muscle. This 'wept' like an eczema. The patient was throwing himself around the bed and coughing almost incessantly, expectorating a thin mucus. He complained of nausea but did not vomit. His face was congested and anxious. He wept at intervals, a stream of tears flowing down his face. The nose was occluded as in a bad case of coryza and from it a thin mucus was discharging. He complained of pain in his head and of marked pain in the lumbar region. He expressed much anxiety as to his condition and exclaimed now and then: 'I don't know why, but I've lost all my nerve.' His temperature was 38 C. (100.2 F.); pulse 100, strong and full. The examination of urine and blood showed nothing abnormal.

"Morphin sulphate 1/6 grain was given by hypodermic injection, an alkaline solution was applied to the arm. The symptoms subsided shortly after and in a few hours the temperature was normal and the pulse 60. The next morning the patient felt weak and complained of a slight sore throat; the pharynx was slightly inflamed."

In the foregoing we have used many words in failing to give a direct answer to our correspondent's question, but if this lengthy confession of relative ignorance will lead to a careful study of the subject our time (about three entire days of one man) used in looking into the literature (both medical and zoologic) in the hope of finding something satisfactory, will have been well spent. Possibly some of our readers are more fortunate than we have been and can give more definite information than we have been able to trace.

In conclusion it may be mentioned that divers, subc as sponge-fishers, are subject to an affection due to contact with celenterates. Smearing the body with fat is said to be a satisfactory preventive measure against this trouble.

WHAT KIND OF INFECTION?—PROBABLY ANTHRAX

To the Editor:—W. H., aged 17, male, coal miner and farmer, squeezed a blackhead and it developed into a small pimple surmounted by a crust. The patient scratched this crust off with his finger-nail. In less than twenty-four hours the lip and cheek began to swell, and in thirty-six hours the swelling was unusually large. At this stage I found him with a temperature of 102 F., pulse 98, very little pain, in fact, more discomfort than pain; he was unable to be up. There was no redness, no pustule.

I thought of erysipelas, actinomycosis, poison ivy. There were no horses nor cattle he could think of having been near, nor was there any poison ivy. I applied a lotion of saturated solution of boracic acid and alcohol, and gave a cathartic and a few powders. In twelve hours more the swelling became much worse; in fact, terrific; there was no heat or pronounced redness; nor was there sharp outlined margin. A small black spot developed at the corner of the mouth; the lips were swollen and parched. Both eyes were closed and a secretion was on the eyelashes like that seen in small children. All the swelling had a blue-black discoloration. Temperature was 103 F., pulse 110. There was neither crepitation nor fluctuation.

A few incisions were made, but they afforded no relief. They were painless. A small quantity of dark and thin fluid escaped, no gas, no odor, no pus. Some incisions were deep, some rather superficial. I also gave 10 c.c. antistreptococcus serum, and covered the swollen area with the solution already mentioned.

All the symptoms and swelling increased; the small black spot spread over the mucous membrane of the cheek and developed into necrosis. The patient died four and a half days after onset of symptoms. In the last twenty-four hours the disease resembled puerperal fever, the temperature being up to 107 F.; there was feeble, almost imperceptible, pulse. During his illness the man received 30 c.c. of antistreptococcus serum.

What kind of an infection was this? Septicemia appears on the death certificate. August Bechtold, M.D., New Athens, Ill.

Answer.—The pimple surmounted by crust which was removed with the finger, the great swelling, the watery fluid which exuded from the incisions, the absence of pain, the bluish discoloration, the development of gangrene, the high temperature and the very rapid progress ending in death point clinically to infection with the anthrax bacillus. This could easily have been verified by a microscopic examination of the fluid from the open pimple.

TINCTURE OF WHITE SOAP

To the Editor:—Some time ago you published a formula for making a neutral liquid soap. I have lost this recipe. Please publish it again. E. J. Bernstein, M.D., Kalamazoo, Mich.

Answer.—Our correspondent probably refers to tincture of white soap, the formula of which was given by F. P. Dunnington, Charlottesville, Va., in the *Old Dominion Journal of Medicine and Surgery*, August, 1909, and which was quoted in the Department of Current Medical Literature of The Journal, Sept. 25, 1909, p. 1058, as follows (with apothecaries' amounts added):

℞		gm. or c.c. for 1 gallon.
White castile soap (Conti's)	℥xl	1,200
Ammonia water, stronger	fl.℥iii	100
Alcohol	Oii	1,400
Water, distilled	q. s. ad. Oviii	4,000

The specific gravity of this mixture is 0.97, which is identical with that of green soap. Soft water (rain-water) might well be substituted for the distilled water in the formula.

To make one gallon: Mix the liquids for it in a one-gallon jar and then add the soap, previously cut into coarse shavings. Crowd all the soap into the jar and cover it with a glass plate. After twelve hours stir, and again stir after some hours. Allow to settle twelve hours, and then filter, decant or syphon off the clear liquid into a can, which may be kept closed. There will remain a few ounces retaining the impurities of the soap, which may be used for less particular washing. If this liquid is exposed to evaporation for a few hours, ammonia and alcohol escape, and a mass of the consistency of green soap will be obtained. While this preparation is said to be free from the objections to tincture of green soap, it presents the additional advantage of costing but $1.50 a gallon, and, if the alcohol is obtained tax-free, the cost will be about 60 cents a gallon, while tincture of green soap will cost $1 or more.

DIFFERENCE BETWEEN A VEGETABLE AND AN ANIMAL CELL

To the Editor:—What is the difference between a vegetable cell and an animal cell? I can find nothing on this subject in any of the books I possess; from what I know of the subject I can see no difference. A. D. Bundy, Osage, Iowa.

Answer.—The fundamental difference appears to be physiologic and connected with the separate manner of nutrition prevailing in the two kingdoms. The typical vegetable builds up its structure from carbon dioxid, water, ammonia and other substances existing in the air and soil. The animal has not this power and must use the material already formed by the vegetable or by other animals. As a result of this mode of nutrition it is found that cellulose, a modification of starch, is found only in vegetables and is employed by most vegetables in forming the cell wall. Cellulose is never found in the cell walls of animals. Some vegetables do not form cell walls composed of cellulose and such vegetable cells have no essential distinguishing features to differentiate them from animal cells.

The Public Service

Medical Department, U. S. Army

Changes for the week ended April 15, 1911.

Crampton, Louis W., colonel, relieved from duty in the Philippines division and will proceed on transport to sail from Manila, P. I., to San Francisco, about Sept. 15, 1911, and on arrival at the latter city to report by telegraph to the adjutant general of the Army for further orders.

McEnery, Douglas W.; Turnbull, Samuel J., and Upshur, Alfred P., M.R.C., ordered to active duty and will proceed to San Antonio, Texas, for duty with the maneuver division at that place.

Boehs, Charles J., M.R.C., ordered to active duty and will proceed to Plattsburg Barracks, N. J., for duty at that place.

Ragan, Charles A., captain, assigned to permanent duty at Walter Reed General Hospital, Takoma Park, D. C.

Kendall, William P., lieut.-colonel, left Fort Riley, Kan., on thirty days' leave of absence.

Wallace, George S., M.R.C., left Fort Sam Houston, Texas, for duty in the field at presidio of Texas.

McMillan, C. W., lieut., relieved from duty with the maneuver division, San Antonio, Texas, about July 1, 1911, and ordered to Fort St. Michael, Alaska, for duty.

Whaley, Arthur M., captain, on being relieved from duty at Fort St. Michael, Alaska, by First Lieutenant McMillan will proceed to Seattle, Wash., for further orders.

Roberson, Horace M., lieut., relieved from duty with the maneuver division, San Antonio, Texas, about July 1, 1911, and ordered to Fort Davis, Alaska, for duty.

Harmon, Daniel W., lieut., on being relieved from duty at Fort Davis, Alaska, by First-Lieutenant Roberson will proceed to Seattle, Wash., for further orders.

Gosman, George H. R., major, left Fort Barrancas, Fla., for Tokyo, Japan, for duty as attache at the American embassy.

DeLaney, M. A., major, ordered to proceed to Philadelphia on official business pertaining to the medical corps of the Army.

Medical Corps, U. S. Navy

Changes during the week ended April 15, 1911.

Ames, M. H., P. A. surgeon, detached from the naval hospital, Olongapo, P. I., and ordered to temporary duty on board the *Albany*.

Turner, H. W. B., asst. surgeon, detached from the *Barry* and the Asiatic torpedo fleet and ordered to the naval station, Olongapo, P. I.

Thomas, G. E., asst. surgeon, detached from the naval station, Olongapo, P. I., and ordered to temporary duty on board the *Saratoga.*

Hart, S. D., asst. surgeon, detached from the *Mohican* and ordered *to the Barry.*

Cook, F. C., surgeon, ordered to command the naval hospital, navy yard, Puget Sound, Wash.

Hale, G. D., P. A. surgeon, detached from the *Idaho* and ordered home to await orders.

Manchester, J. D., P. A. surgeon, detached from the naval recruiting station, Chicago, and ordered to duty at the naval hospital, naval training station, North Chicago.

Smith, W. B., P. A. surgeon, orders of March 17 modified; ordered to duty at the naval hospital, Annapolis, Md.

Ely, C. F., P. A. surgeon, detached from the naval hospital, Philadelphia, and ordered to the naval proving ground, Indian Head, Md.

Halton, E. P., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the naval station, Guam, M. I.

Brown, E. M., asst. surgeon, detached from the naval proving ground, Indian Head, Md., and directed to await orders.

Ohnesorg, K., surgeon, detached from the *Prairie* and ordered home to await orders.

Stuart, Jr., D. D. V., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Idaho.*

Mears, J. B., P. A. surgeon, detached from the *Franklin* and ordered to the Asiatic station.

Howard, J. V., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Supply.*

Pratt, L. L., Omelvena, J. G., and O'Malley, J. J., asst. surgeons, detached from the naval medical school, Washington, D. C., and ordered to the Asiatic station.

Crow, G. B., asst. surgeon, detached from the naval station, Guam, M. I., and ordered home to await orders.

Toulon, A. J., asst. surgeon, detached from the *Supply* and ordered home to await orders.

Elmore, B., A. A. surgeon, ordered to the marine recruiting office, district of the Pacific coast, Seattle, Wash.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended April 12, 1911.

Stimpson, W. G., surgeon, directed to proceed to Marcus Hook, Pa., and Delaware Breakwater quarantine station on special temporary duty.

Anderson, J. F., P. A. surgeon, detailed to represent the Service at the meeting of the American Association of Pathologists and Bacteriologists to be held in Chicago, April 14-15, 1911.

McClintic, T. B., P. A. surgeon, directed to proceed to Delaware Breakwater quarantine station on special temporary duty.

Vogel, C. W., P. A. surgeon, directed to proceed to Marcus Hook, Pa., on special temporary duty.

Warren, B. S., P. A. surgeon, granted fourteen days' leave of absence from April 8, 1911, on account of sickness.

McKeon, F. H., P. A. surgeon, relieved from duty at the immigration station, San Francisco, and directed to report to the commanding officer of the Revenue Cutter *Rush* for duty.

Bailey, C. A., A. A. surgeon, directed to accompany the staff of the U. S. Immigration Service from St. John, N. B., to Quebec, P. Q., for the inspection of arriving aliens.

Hough, J. S., A. A. surgeon, granted thirty days' leave of absence to be taken at such times as may be approved by Surgeon B. W. Brown.

McLarty, A. A., A. A. surgeon, died March 24, 1911.

Board of medical officers convened to meet at the Bureau, April 11, 1911, for the examination of Assistant Surgeon J. R. Hurley, and reconvened, April 24, 1911, for the examination of Assistant Surgeon W. M. Bryan, to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General L. E. Cofer; Passed Assistant Surgeon L. L. Lumsden, recorder.

Board of medical officers convened to meet at San Francisco, April 24, 1911, for the examination of Assistant Surgeon A. J. Lanza, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: *Surgeon Rupert Blue,* chairman; Passed Assistant Surgeon M. W. Glover; Passed Assistant Surgeon Friench Simpson, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

LEGAL RIGHTS AND OBLIGATIONS OF PHYSICIANS *

John E. Kehoe

CHICAGO

The most important legal question for the physician is that which relates to the rights, duties, legal obligations, responsibilities and liabilities of the physician in caring for his patient. This is becoming a more important question every day. Litigation in the nature of suits for damages of various kinds is, at present, occupying about three-quarters of the time and attention of the courts of Cook County. It almost seems as if the entire populace was trying to find an excuse for suing somebody for damages, and, in this epidemic of damage litigation, physicians and surgeons are by no means forgotten. If a person is dissatisfied with the professional service rendered by the physician or surgeon, it apparently is becoming almost the rule, rather than the exception, to consult a lawyer and see if some basis cannot be found for starting a suit for damages in which the lawyer, as a rule, agrees to accept a contingent fee, consisting of a percentage of the amount to be recovered. It becomes a very important matter, therefore, for the physician to know what his legal rights and obligations are, in order that while doing his full duty to his patient he may, at the same time, protect himself from the danger, embarrassment and annoyance of a claim for damages in case his patient is dissatisfied. A physician's rights and legal obligations are controlled by certain legal principles which, grouped together, are known as the law of negligence. Negligence is defined in law to be an omission to do something which a reasonable man, guided by those considerations which ordinarily regulate the course of human affairs, would do; or, doing something which a reasonable and prudent man would not do. In order to maintain an action for negligence, there must be shown to exist some obligation or duty which has been left undischarged or unfulfilled.

To understand just what constitutes legal actionable negligence on the part of a physician, it is necessary to bear in mind the various degrees of care which the law exacts under various conditions. There are a number of degrees of care under the law: First, there is the highest degree of care which human forethought, reason and diligence can attain. Where the law imposes this highest degree of care, as, for instance, in the case of a railroad company carrying passengers for hire, the slightest negligence or simplest omission of duty becomes actionable in law. This highest degree of care, however, is not exacted or required of a physician or surgeon under the law of this state, or in any other state of the Union. The next degree of care, under the law, is what is known as ordinary care or reasonable care, and is defined in law as being that degree of care which an ordinarily prudent person would exercise under the same circumstances or conditions. This is the degree of care which, together with the exercise of a proper degree of skill, is required in law from a physician or surgeon in the discharge of his duty to his patient.

Going on down the scale, there is a lack of care known to the law as gross negligence which, of course, both as a matter of reason and law, would lay the foundation for damages. There is also known to the law what is called wilful or wanton misconduct, which may be defined as an act showing a willingness to harm the person in question, or such an utter disregard of his rights as to indicate an abandoned or malignant heart. Such conduct in any walk of life would be actionable, and the law says that, as against a claim for wilfulness or wantonness, it is not even necessary that the person presenting the claim must show himself to have been in the exercise of ordinary care.

It will be seen from the above that neither is the highest degree of care exacted of, nor is a low degree of care tolerated on, the part of the physician or surgeon. In other words, the physician and surgeon is held in law to the exercise of ordinary, reasonable care and skill. In general, his duty may be defined substantially as follows: The physician is bound to bestow such reasonable ordinary care, skill and diligence as physicians, in the same neighborhood, in the same general line of practice, ordinarily have and exercise in like cases. Time and locality are to be taken into consideration, and the physician is bound to exercise the average degree of skill possessed by the profession in such locality. In the absence of special agreement, his engagement is to attend the case as long as it requires attention; unless he gives notice of his intention to discontinue his visits, or is dismissed, he is bound to exercise *reasonable and ordinary care* and skill in determining when his attendance should cease. But his engagement is not to cure the patient, that is, he does not insure that his treatment will be successful; the mere failure to effect a cure does not even raise a presumption of a want of proper care, skill or diligence. It is the duty of the patient to cooperate with the physician and to conform to his prescriptions and directions, and, if he neglects to do so, he cannot hold the physician responsible for his own neglect. On the other hand, he has a right to rely on the instructions and directions of his physician, and incurs no liability by so doing.

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* Read before the Evanston Branch, Chicago Medical Society, March 30, 1911.

This is substantially the rule in Illinois and in practically every other state. There is an implied contract on the part of the physician that he possesses that reasonable degree of skill, learning and experience which is ordinarily possessed by others of his profession, and that he will use reasonable and ordinary care and diligence in the treatment of the case committed to him, and that he will use his best judgment in all cases of doubt, as to the best course of treatment. He is presumed to possess the degree of skill above defined, and to exercise reasonable care and to use his best judgment, but he does not guarantee that his judgment is infallible, and he cannot be held in law responsible for an error of judgment where he shows that he exercised ordinary care, and that he possessed the skill ordinarily possessed by others of his profession in the given locality. His failure to effect a cure can never be held to indicate even a presumption of want of care or skill. It will be noted that the locality is a matter to be taken into account. In a rural community with limited opportunities, the same degree of skill is not required as that which is exacted in a metropolis, where superior advantages are available. For instance, a general practitioner who had had but little experience in the treatment of the eye would not be justified in performing a delicate and dangerous operation on the eye of a patient in a community where a specialist of especial skill and experience is obtainable; while the same general practitioner might be entirely justified in law in attempting the same operation in a community where it was impossible to secure the services of such a specialist. Time and place, therefore, cut some figure in the matter, but the general rule remains universally true that only such care and skill are required as are possessed and applied by physicians in good standing in the community. The Supreme Court of this state has said that you cannot exact of the physician the highest degree of skill which the most learned might acquire in the profession, nor can you regard him as an insurer of the successful termination of his work; that he is not required to possess the highest order of qualifications to which some men attain, but that he must possess and exercise the degree of skill which ordinarily is possessed by members of his profession in good standing. For anything short of a reasonable amount of care and skill in his practice the law will hold him responsible, but the burden always rests on the one presenting the complaint to show that the physician was deficient in this regard. If the physician, in the exercise of reasonable care and skill, uses his best judgment in case of doubt, he cannot be held for a want of success, and so, in the treatment of disease or injury, he is bound to bring to his aid such obtainable remedies and appliances as discovery and experience have found to be most appropriate and beneficial in aiding recovery. But it may often happen that the most appropriate appliances or remedies are the very simplest and most commonplace, and, in such case, he is bound only to use his best judgment with reasonable care and skill. He is not liable, even if injurious results follow his treatment, unless it is shown that such injurious results were due to a failure to use ordinary reasonable care and skill. A fatal result may follow from the peculiar condition of a patient of which the physician had no knowledge, or the peculiar temperament of the patient over which he had no control, and, in such case, the exercise of his best judgment, with the care above defined, constitute a complete defense. The fact that a patient grew worse under the treatment of one physician and became better under the care of another, does not even raise a presumption in law that the treatment of the first was not proper. In other words, the law will not permit the drawing of a conclusion of unskilfulness from the result of the treatment alone. A physician, in passing from a patient infected with a contagious disease to others who are not so infected, must take such reasonable precautions as experience has shown to be necessary to prevent the communication of the infection, but if he does this he will not be held liable for the consequences. In the application of the general rule, a physician is chargeable with the knowledge of the probable consequences of the form of treatment or operation that he undertakes, and is expected to exercise ordinary care and skill to prevent unfavorable consequences. Under the general rule of wilfulness and wantonness, a physician may be held liable for exemplary damages, that is, damages by way of punishment, if it be shown that he was guilty of such a gross want of care as to indicate that he was probably conscious of the consequences of his carelessness and indifferent to the danger to which he subjected the patient.

The patient has a right to assume that one holding himself out as a surgeon possesses reasonable skill; and so, if a physician attempts to perform surgical operations, when his lack of experience renders it impossible for him to exercise ordinary skill, his ignorance of the knowledge of his profession will not constitute an excuse.

The principle of ordinary care applies also to the question of attendance on a patient; that is, there is a duty on the physician to continue his attentions so long as from the condition of the patient one might reasonably expect him, in the exercise of an honest judgment, to believe it necessary, and any culpable neglect on his part in this regard would render him liable to an action. A physician who leaves a patient at a critical stage of a disease, without reason or without attempting to procure another medical attendant, would be held in law to be guilty of actionable negligence. Of course, if he is discharged by some one in authority, this relieves him of responsibility; but ordinarily he must exercise reasonable care in determining when his attendance may be safely discontinued; but no error of judgment in this regard, or any other matter pertaining to his treatment will render him liable for consequences where he keeps within recognized and approved methods, and uses his best judgment with ordinary care and skill. No error of judgment will hold the physician responsible, unless it is so gross as, on its face, to imply a want of ordinary care and skill. Of course, an error of judgment may be so great as to be inconsistent with the belief that ordinary care and skill were exercised. For instance, a man might hold himself out to the world as an oculist, without any knowledge of the science, and obtain a patient and commence tinkering with the most delicate of all the organs, the eye, and destroy the sight. Perhaps it would only be an error of judgment, but it would be such an error as to constitute malpractice.

The physician must exercise ordinary care in giving proper instructions to those in attendance on the patient, and a failure in this regard, if it results in damage to the patient, is actionable. In other words, he must exercise the same care in giving proper instructions to the attendants, where attention is necessary in his absence, as he gives in his own work on the case.

Another principle to be borne in mind is that the physician must follow established practice. The rule is very strict against trying experiments. On its face, this rule seems rather harsh, because it means that any advancement in the profession must be at the personal risk of the physician rather than of the patient. It has been held in many of the states that any deviation from the established mode of practice is sufficient to charge the surgeon in the case with any injury resulting to the patient. In general, the physician is bound by what is universally settled in the profession, not by what some writers and practicing surgeons recommend. If the ordinary and established practice of the profession is to treat an ailment in a particular manner, and the attending physician adopts some other mode that proves injurious, it is immaterial how much skill he possessed, since his experiment failed. If the settled practice of the profession allows but one course of treatment in the case, any departure from such course is at the physician's risk. He cannot try experiments with his patient to the patient's injury.

When we consider the wonderful advance in medicine and surgery from generation to generation, and consider how near it comes to being an exact science to-day, and how crude and barbarous were the methods described by early writers, and when we remember that all of this advance is the result of new discoveries, new experiments and new methods developed by skilled and learned members of the profession from age to age, the rule above set out seems very harsh, but it is an almost universal rule and it is one that physicians must bear in mind for their own protection.

There are some modifications to the rule: In case of emergency, when there is no well-known method that could be relied on in the particular case, and when the physician must act hastily with such means as are at his command, the rule, of course, would not be enforced. Again, by ordinary and established practice is meant the established practice of the physician's own school, and he is only expected faithfully to treat the patient according to the recognized rules of his particular school. Although someone else might think that some other school of medicine was better, his skill is to be judged by the school of practice to which he belongs and according to the avowed system which he professes. Of course, the law requires him to come up to at least the average standard of the school to which he adheres. By school in this sense the law means generally recognized method of treating disease or injury. A person who attempts to practice as a clairvoyant, or who attempts to heal disease by means of some occult influence exercised by him or some mental intuition received by him when in an abnormal condition, cannot excuse himself on the ground that he is practicing according to his school, but must take the risk if he fails to exercise the skill ordinarily possessed by a reputable practicing physician or surgeon.

In some states it has been held that if the service rendered was gratuitous the physician is not held to the exercise of so high a degree of care, but the rule in Illinois is that if a person holds himself out to the public as a physician he will be held to the exercise of ordinary care and skill in every case, whether he receives a fee for his service or not.

It is perhaps well to say, in connection with the rule of ordinary care above laid out, that the law imposes on the person making the complaint the duty of showing that he also exercised reasonable and ordinary care in carrying out the physician's instructions and in attempting to heal himself. Any failure in this regard on his part, if shown in an action, is a complete bar to his right of recovery in law; that is to say, in order to maintain his action, he must show two things: first that he was not guilty of any failure to exercise ordinary and reasonable care in carrying out the instructions of the physician and in attempting to cooperate with the physician for his own recovery, and second, he must show that the physician failed to exercise ordinary and reasonable care and skill in the conduct of the case; the burden of proof rests on the complainant in both of these respects.

164 Dearborn Street.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Ninth Month—Fourth Weekly Meeting

Diseases of the Nervous System (Continued)

Tuberculous Meningitis

Pathology: Tubercle, size, number, locations. Changes in pia and dura, in brain substance. Character, quantity and location of exudate. Association of meningitis with other tuberculous lesions. Relation of symptoms to lesions.

Symptoms: Prodromata, onset, duration of early symptoms. Convulsions, stupor or coma, headache, crying, muscular rigidity, eye symptoms, gastro-intestinal symptoms. Pulse, temperature and respiration. Second stage: Increase of early symptoms, paralyses, eye symptoms, mental symptoms, respiration. Duration of second stage. Third stage: Coma, eye symptoms, pulse, temperature, respiration. Variations in course of disease at different ages. Duration and prognosis.

Chronic Basilar Meningitis (Still)

Etiology: *Diplococcus intracellularis.* Syphilis.

Symptoms: Previous history. Onset, opisthotonos, hydrocephalus, muscular rigidity. Eye symptoms. Mental condition. Course and duration.

Chronic Internal Hydrocephalus

Etiology: Primary, congenital, cases; heredity, syphilis, rickets. Secondary; tumor, meningitis.

Pathology: Quantity, physical and chemical characteristics of fluid. Secondary changes in fluid. Changes in brain substance, in ependyma, in bony structures.

Symptoms: Size of head, character and rate of enlargement. Sutures and fontanelles. Motor symptoms. Eyes, mental symptoms. Clinical varieties.

Monthly Meeting

The Diagnosis and Treatment of Congenital Heart Disease.
The Treatment of Convulsions in Infants and Children.
The Early Diagnosis of Tuberculous Meningitis.
The Diagnosis and Treatment of Cerebrospinal Meningitis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Regular, Little Rock, May 9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, May 9. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, May 9. Sec., Dr. G. A. Hinton, Hot Springs.

Florida: Regular, Tallahassee, May 8-9. Sec., Dr. J. D. Fernadez, Jacksonville; Eclectic, Lakeland, May 1-3. Sec., Dr. Hiram J. Hampton, Tampa.

Georgia: Homeopathic, Atlanta, May 2. Sec., Dr. R. E. Hinman, 153 Whitehall St., Atlanta.

Illinois: City Hall, East St. Louis, May 3-5. Sec., Dr. J. A. Egan, Springfield.

Kentucky: The Armory, Louisville, May 31. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: Regular, New Orleans, May 18-20. Sec., Dr. A. B. Brown, 108 Baronne St.; Homeopathic, New Orleans, May 1 Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

Massachusetts: State House, Boston, May 9-11. Sec., Dr. Edwin B. Harvey, Room 159, State House.

Mississippi: Jackson, May 9. Sec., Dr. S. H. McLean.

Nebraska: State House, Senate Chamber, Lincoln, May 24. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

Nevada: Carson City, May 1-3. Sec., Dr. S. L. Lee.

New York: May 23-26. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

Wisconsin: Milwaukee, May 24-26. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

New Mexico January Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, Jan. 9, 1911. The number of subjects examined in was 11; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 2, both of whom failed. Fourteen candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

FAILED

College	Year Grad.	Per Cent.
Tennessee Medical College	(1906)	44
Gate City Medical College	(1909)	35.4

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.
Columbian University, Washington, D. C.	(1894)
Georgetown University	(1908)
Louisville and Hospital Medical College	(1908)
University of Louisville	(1905)
Michigan College of Medicine and Surgery	(1897)
University Medical College, Kansas City	(1901) (1909)
American Medical College, St. Louis	(1891)
New York University Medical College	(1884)
Toledo Medical College	(1907)
[illegible]ge, Philadelphia	(1906)
[illegible]	(1904)
Vanderbilt University	(1906)
Medical College of Virginia	(1899)

District of Columbia January Report

Dr. George C. Ober, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examination held at Washington, Jan. 10-13, 1911. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1909)	78.7
Johns Hopkins University	(1910)	85.7
University of Michigan, Dept. of Med. and Surg.	(1898)	79.2
St. Louis College of Physicians and Surgeons	(1910)	76.9
Jefferson Medical College	(1909)	84.4
University of Virginia	(1910)	82.5

FAILED

College	Year Grad.	Per Cent.
Jefferson Medical College	(1908)	69.3

Book Notices

DEUTSCHES ARZNEIBUCH. Fünfte Ausgabe 1910. Paper. Price 3.90 marks. Pp. 680. Berlin: R. v. Deckers Verlag, G. Schenck, Königlicher Hofbuchhändler, 1910.

It has frequently been asserted that pharmacopeias, more than any other publication, reflect the ideals and the practices of the medical profession of the time and the country for which they are published. Accepting this statement as based on fact we can readily appreciate the reasons why this, the fifth, edition of the "German Medicine Book" has been so anxiously awaited by pharmacists and by teachers of materia medica. As indicated by the absence of the Latin synonym accompanying the official title in former editions, the present book is thoroughly German and, in fact, is the first of the several editions to be compiled entirely under government supervision, in the division on materia medica of the "Reichs Gesundheitsamt."

Because of the many innovations embodied in this edition the book is being liberally discussed and promises to prove the forerunner of a new era in medicine and pharmacy by indicating how the medicaments used by the physician can and should be controlled to insure their purity and efficiency. To appreciate this more fully it should be understood that in Germany the object and the use of the pharmacopeia is somewhat sharply defined and the book is recognized primarily as one of directions for the apothecary in the manufacture and control of medicaments designed to be used on physicians' prescriptions.

One of the more important innovations is the liberal recognition that has been accorded to perpetually protected or trademarked names. The German government by introducing proprietaries into its pharmacopeia not only gives due credit to German chemical industries for the introduction of new remedies but also safeguards the interests of the public by requiring that the medicaments advertised and sold under recognized trade names must conform to pharmacopeia requirements. Where a scientific designation is more convenient or in general use, it has been adopted as a chief title followed by the trade name.

In addition to the rather liberal recognition given to new remedies, a number of general descriptions or class headings have been adopted. These have long been a distinctive feature of the German Pharmacopeia and are of great practical value, particularly in a book which. like the one under discussion is designed to serve as a guide to the apothecary in the compounding of prescriptions and not to be a book of standards for regulating the trade in drugs and medicines generally. The new pharmacopeia contains a total of forty-four titles more than the Pharmacopeia Germanica IV and this difference is largely made up of new remedies and general headings.

For the medical practitioner in countries other than Germany and more particularly for the medical practitioner of the United States this edition of the German Pharmacopeia is an indication of the services that can and should be rendered by the pharmacist in controlling and safeguarding the identity and purity of the drugs used in the treatment of diseases. With the practice of pharmacy in this country based on scientific training and the pharmacist able to control and to guarantee the purity and efficiency of the drugs he dispenses there would be little or no need for special brands of medicines and absolutely no need for the many ready-made mixtures of the patent medicine type now prescribed by physicians.

I. REPORT ON AN OUTBREAK OF TYPHOID FEVER AT OMAHA, NEB. (1909-1910). By L. L. Lumsden. II. THE WATER SUPPLY OF WILLIAMSON, W. VA., AND ITS RELATION TO AN EPIDEMIC OF TYPHOID FEVER. By W. H. Frost. Hyg. Lab. Bull. 72, November, 1910, U. S. P. H. and M.-H. S. Paper. Pp. 94, with illustrations. Washington: Government Printing Office, 1910.

L. L. Lumsden reports an investigation of an epidemic of typhoid in Omaha, lasting from November, 1909, to March, 1910, a brief account of which was given in THE JOURNAL, May 7, 1910, p. 1555. After eliminating, through a study of the statistics of 105 cases, such sources of infection as milk, ice, etc., a detailed account is given of the probabilities of water as the carrier. The public supply is obtained from the Missouri River at two points, one at some distance above Omaha, and the other at the city. The water is stored for about six hours, and alum is added for a coagulant. Sewage enters the river about 8 miles above the city intake, as well as at a number of places along the banks at no great distance from the city. The number of cases of typhoid fever among persons using water from this latter intake was disproportionately large. Analyses are given showing that the water from both intakes was badly polluted in spite of the attempted purification. A study of climatic conditions led the author to believe that during the fall of 1909 the river was subject to more than the usual degree of pollution. Infected water is regarded as without doubt the source of the outbreak. Recommendations are made that the river be more carefully guarded against dangerous pollution, and that the water be treated by mechanical filtration followed by the addition of hypochlorite of lime.

W. H. Frost, in the same bulletin, reports an investigation made during May and June, 1910, of an epidemic in Williamson, W. Va., which started about Nov. 1, 1909, and continued for several months. The general sanitary condition of the town and the water-supplies was carefully studied. A high power of pollution was found to exist not only in the town water but also in a number of shallow wells, which are in rather general use as the public supply is of a disagreeable character, being obtained from a river which receives washings from a coal mine located in one part of the town. Frost believes that the original source of the epidemic was the water, which became more than usually polluted on account of the low condition of the river in the fall of 1909 and the many possible sources of contamination which exist along its banks. A normal condition was resumed in January, but typhoid fever still continued. This is believed to have been due to contact infection. A study of the statistics of the later cases showed that many had to come in contact with previous cases. More evidence is furnished for this belief by the facts that in a majority of instances no efficient means of disinfection were used, and that great opportunity exists for contamination of wells, owing to the generally poor sanitary arrangements.

Recommendations are made: (1) that the public supply be purified with hypochlorite of lime or ozone, a new supply being considered impractical on account of the lack of sources in the region; (2) that methods of sewage disposal be improved; (3) that more careful disinfection be employed; (4) that the board of health supervise the sale of milk and other foods.

Plastic and Cosmetic Surgery. By Frederick Strange Kolle, M.D., Fellow of New York Academy of Medicine. Cloth. Price, $5. Pp. 511, with 522 illustrations. New York: D. Appleton & Co., 1911.

The author has brought together in this work a rather full statement of the plastic surgery of the head and face. Preliminary to this he takes up the principles and the practical details of operations in this field, and thus in reality gives the first 100 pages to a consideration of minor operative surgery. In successive chapters he considers the plastic surgery of the eyelids, the ears, the lips, the mouth, and the cheeks; and these chapters are good. They represent a grouping of the subject of plastic surgery of the face and head that is valuable to anyone looking for practical knowledge in this field. The plastic and cosmetic surgery of the nose is taken up after considering paraffin prosthesis.

To the subject of subcutaneous hydrocarbon prosthesis Kolle gives 130 pages, in which the subject is very fully considered. It is a very useful presentation of the subject, to which anyone may turn with satisfaction for information. The author is a very enthusiastic advocate of paraffin prosthesis for the correction of defects. In its use for the correction of serious anatomic defects or deformities we have no criticism of his position to offer, but its use for the removal of trivial cosmetic defects—to smooth out wrinkles, to fill out hollow necks or flabby cheeks, for decorative purposes, for example—we believe should be very strongly condemned. Those of us who are seeing the hyperplastic tumors sometimes following these injections are impressed with the fact that to justify putting a mass of paraffin into the connective tissue there should be a more important indication than the smoothing out of a wrinkle or the improvement of the contour of the alæ nasi, particularly as in making the change one gives the injected tissue all of the motility of a graven image.

On the whole the work will be found a useful treatise on the subject of which it treats.

The Health Index of Children. By Ernest Bryant Hoag., M.A., M.D., Medical Director of Berkeley Schools. With Prefatory Note by Frank F. Bunker, Ph.B., Superintendent of Berkeley Schools. Cloth. Price, 80 cents. Pp. 188, with illustrations. San Francisco: Whitaker & Ray-Wiggin Co., 1910.

Dr. Hoag has that happy and all-too-rare ability to address the layman in the layman's own language without in the slightest degree compromising scientific accuracy. Perhaps a single exception may be found in the title of this book itself, which fails to convey to the uninitiated its real purpose and nature as the title of a popular treatise really should.

"The object of this little manual," to quote the author himself, "is to show teachers and parents how to detect easily those ordinary physical defects of the child which bar his progress in school and life, and to suggest means by which such defects may be removed and good health afterward maintained. Incidentally, it may prove of some value to physicians who are for the first time applying themselves to this special sort of public health work." The book contains just such practical information as every parent, teacher and school inspector should have to enable them to detect in their incipiency such defects as adenoids, deafness, eye-strain, nervousness, defective teeth, and to take the proper measures to have them remedied before irreparable damage has been done. The book contains admirable diagnostic tables, few but well-chosen photographs, clean-cut simple summaries, curves and diagrams, all so plain that any mother of average intelligence can understand them. In the present far-reaching tendency to take an eager public into the confidence of the medical profession, this little book should take a prominent position because it deals with those at the threshold of life where defects can be prevented or easily remedied. Such books are the natural antidote to the isms that have grown fat on ignorance; and we wish that every mother and father and school teacher could "read, mark, learn and inwardly digest" this little volume.

Practical Physiological Chemistry. By R. H. Aders Plimmer, D.Sc., Assistant Professor of Physiological Chemistry, University College, London. Cloth. Price, $1.80. Pp. 270, with 49 illustrations. New York: Longmans, Green & Co., 1910.

In this book an attempt is made to cover too much ground in a small space, and as a result both accuracy and clearness suffer. Thus, in the first thirty pages the student is informed on no greater number of subjects than qualitative and quantitative organic analysis, distillation, filtration, extraction, melting-point determination, boiling point determination, three methods of molecular weight determinations and discussions under headings such as "Constituents of a Cell" and "Life Cycle of the Elements." The remainder of the text is devoted to brief considerations of the most elementary features of organic chemistry and more or less detailed treatment of the biologically important constituents of protoplasm, the latter being considered from the qualitative and quantitative points of view. Statements such as that the constitution of d-glucose, d-mannose, d-galactose and d-fructose "is proved by their reduction to the corresponding hydrocarbon hexone and by oxidation" are very misleading. There is also at least one important omission. The pyrimidin bases are not mentioned; the student is simply told in different parts of the text that nucleic acid contains pentose, guanine and adenine, that it is obtained from nucleoprotein and that the latter contains phosphorus in the nuclein portion.

Diagnostik der Nervenkrankheiten. Von Dr. L. E. Bregman, Oberarzt am städtischen jüdischen Krankenhaus in Warschau. Mit einem Geleitwort von Dr. H. Obersteiner in Wien. Paper. Price, 12 marks. Pp. 535, with 193 illustrations. Berlin: S. Karger, 1911.

Of the books on the diagnosis of nervous diseases which have hitherto appeared in English or German, we know none which approaches the subject from the viewpoint of semeiology, a method which has long been in vogue among the French. It is this method which is successfully followed by Bregman. In sixteen short chapters he approaches diagnosis from such symptom-groupings as paralysis of motion, of sensation, the special senses, reflex and speech disturbances and other symptom-complexes, with, in addition, a chapter on the diagnosis of psychic disorders. In a work including so much, we might expect a mere collection of tabulated diagnostic aids. The author gives, however, a full and concise account of everything important in the clinical diagnosis of nervous diseases. To summarize, it may be said that all topics have been given due attention and are entirely up to date. This manual is the product of one who is not only well trained in the best methods of neurologic examination, but who can also explain them and teach how to correlate the findings. The book on the whole is a distinct gain to modern neurologic literature.

A Study of the After-Results of Abdominal Operations on the Pelvic Organs. Based on a Series of 1,000 Consecutive Cases. By Arthur E. Giles, M.D., Surgeon to the Chelsea Hospital for Women. Cloth. Price, 10 shillings 6 pence. Pp. 251. London Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, 1910.

The author analyzes the after-results in 1,000 cases of pelvic operations. Only one who has attempted to follow up patients for some time after operations will appreciate the immense amount of labor it has cost the author to follow out and determine the present condition of 1,000 patients who had been operated on for pelvic diseases during the past several years. It too often happens that the patient who escapes from the hospital with her life is immediately reported as having been cured of her trouble; or, if the case is reported later, it is assumed that the patient is well simply because she has not been seen or heard of since the operation. It is only by the painstaking method adopted by Dr. Giles that the defects, as well as the advantages, of a given operation become apparent. In the first part of the work the author gives in detail the present condition of the patients, classified according to the particular operation performed, and in the second, a brief clinical history of each case.

The author is to be commended for the earnest effort made and congratulated on the excellent results obtained.

Handbook of Treatment for Diseases of the Eye (Ophthalmic Therapeutics). By Dr. Curt Adam, Assistant-Surgeon in the I. University Clinic for Diseases of the Eye, Berlin. With a Preface by Prof. von Michel, Berlin. Translated from the Second German Edition (1910), by William George Sym, M.D., F.R.C.S.Ed., and E. M. Lithgow, M.B., F.R.C.S.Ed. Cloth. Price, $2.50. Pp. 264, with 36 illustrations. New York Rebman Co., (1911).

The second edition of this small manual, as its title indicates, contains the essentials of ophthalmic therapeutics. It is evident that a full account of this important subject cannot be crowded into so small a space, yet the book contains a surprisingly large amount of information. While it is merely a compend, we believe that it stands as a series of useful, predigested facts that will be more readily absorbed by the general practitioner and by the student of ophthalmology than larger and more imposing treatises. The space (20 pages) set apart for the consideration of refraction and the prescribing of spectacles seems unduly restricted, at least to our American notions, but probably from the German point of view it is sufficient. The work has a place in ophthalmic practice if for no other reason than that judiciously written compendiums on special subjects are always of value to those who do not make a particular study of the medical department in question.

HERNIA. Its Cause and Treatment. By R. W. Murray, F.R.C.S., Surgeon, David Lewis Northern Hospital. Second Edition. Cloth. Price, $1.75 net. Pp. 184, with 62 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

In explanation of the existence of this little volume the author says: "My reasons are that I believe the explanation offered in the following pages as to the cause of hernia to be the true explanation and the results I have obtained by a simple method of operating are extremely encouraging." The author is a firm believer in the so-called saccular theory of the cause of hernia, which was so well presented some time ago by Mr. Hamilton Russell of Melbourne. Most surgeons who have given the subject much study are now convinced that the great majority of hernias are due to congenital defects in the shape of preformed sacs regardless of the age at which the rupture becomes evident. Murray's method of operating does not differ materially from the standard operation generally in use to-day. He merely emphasizes again the necessity of complete removal of the sac whenever that is possible.

LE TRONC CŒLIAQUE. Par Pierre Descomps, Prosecteur des Hôpitaux. Travail de l'Amphitheatre d'Anatomie des Hôpitaux. Recherches d'Anatomie Chirurgicale sur les Artères de l'Abdomen. Cloth. Price, 10 francs. Pp. 205, with 97 illustrations. Paris: G. Steinheil. 1910.

The amount of surgery being done in the upper abdomen on the organs which receive their blood-supply from the celiac axis makes it incumbent on the surgeon to have an accurate knowledge of these vessels, their surgical relations, anastomoses and their most common deviations from the normal. In order to be able to present this subject clearly, the author made a careful study of this region in fifty cadavers. The arteries were injected through one common iliac after ligating the opposite common iliac and the aorta just below the diaphragm. The findings in the fifty cases are well illustrated by ninety-seven figures, each of which is thoroughly described in a voluminous text of about 200 pages. The literature is also well covered and the findings of other anatomists are recorded, where these relate to deviations from the accepted normal. The work is an excellent study in descriptive and surgical anatomy and has a decided practical value.

HISTORY OF ANTHROPOLOGY. By Alfred C. Haddon, M.A., Sc.D., F.R.S., Fellow of Christ's College, University Reader in Ethnology, ...idge. With the Help of A. Hingston Quiggin, M.A., Formerly ...ham, Cambridge. Cloth. Price, 75 cents. Pp. 206, with ... New York: G. P. Putnam's Sons. 1910.

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Thus the work will be of service as a work of reference, whether or not one accepts the author's conclusions. Its perusal will do good, as no doubt many people eat too much meat and too little of some valuable vegetable products.

HUGHES' PRACTICE OF MEDICINE. Including a Section on Mental Diseases and One on Diseases of the Skin. Revised and enlarged by R. J. E. Scott, M.A., B.C.L., M.D., Attending Physician to the Demilt Dispensary. Tenth Edition. Leather. Price, $2.50 net. Pp. 878, with 63 illustrations. Philadelphia: P. Blakiston's Son & Co. 1911.

This old standby for the student and the general practitioner is evidently keeping up the popularity it has enjoyed for so many years. This popularity is due to the fact that the book gives practical discussions of diseases as briefly as is consistent with the subject, theories being eliminated. The present edition has been brought thoroughly up to date, all necessary changes having been made to adapt it to modern medicine. Many of the articles have been practically rewritten, and some new ones added.

Medicolegal

License Rights of Certain Practitioners—Powers and Duties of State Board

The Supreme Court of Idaho holds, in Vadney vs. State Board of Medical Examiners (112 Pac. R. 1046), that, under the provisions of Section 1298 of the Revised Statutes of 1887, no person was permitted to practice medicine or surgery *in that territory (now state) who had not received a medical* education and a diploma from some regularly chartered medical school having a bona-fide existence at the time the diploma was granted, and when it appeared that the applicant for a license to practice medicine and surgery in the state was engaged in the practice of his profession under the provisions of the Laws of 1887, and had complied with all of the provisions of section 5 of the Act of 1899, it was the duty of the State Board of Medical examiners to issue to him a license to practice medicine and surgery in Idaho.

A diploma from a regularly chartered medical school, which has a bona-fide existence at the time the diploma was granted, and a compliance with the provisions of section 1298a and 1298b of the Revised Statutes of 1887, with reference to being identified and filing a copy of the diploma, was all the proof that the statute required at that time of the applicant's having a medical education, and under the act of 1899 the medical board had no authority to require any other or further evidence of the fact.

The State Board of Medical Examiners, under the law of 1899, had no authority to refuse a license to an applicant who was engaged in the practice of medicine and surgery under the Laws of 1887, on the ground that the college issuing the medical diploma under which he was practicing was *not* a "reputable college of medicine in good standing." The board had a right to determine the question about the college issuing the diploma being a "reputable college of medicine in good standing" under the Act of 1899, where the applicant had not been practicing medicine and surgery under the Act of 1887; but when the applicant had been practicing under the Laws of 1887, and made application under the fifth section of the Act of 1899 for a license, the board had no authority whatever to determine that question. If the plaintiff had a diploma from a regularly chartered medical school that had a bona-fide existence at the time the diploma was granted, that was all that was necessary, so far as the diploma was concerned.

If the plaintiff's application was not properly verified, it was the duty of the secretary of the board to return it to the applicant for verification, and if the persons who certified to the good moral character of the plaintiff were not satisfactory, the plaintiff ought to have been notified of that fact and given an opportunity to furnish the names of other persons who would certify to his good moral character, if he could.

Under the provisions of section 9 of the medical law of 1899 there is no provision for an appeal from an order of the State Board of Medical Examiners refusing to grant a license to an applicant; but said section contains a provision whereby the proper court may review by certiorari certain proceedings of said board.

Relative Weight of Evidence of Attending Physicians

The Supreme Court of Louisiana holds, in the personal injury case of Rickerson vs. Town of Minden (53 So. R. 667), that the testimony of a physician who attended a person immediately after an accident is of more weight on the question of the seriousness of the injury than that of a physician who attended the injured person a year after the accident, for other causes and conditions might have intervened during the year.

Evidence of Fetus Being Quick

The Supreme Court of Kansas says that it was urged in the criminal abortion case of State vs. Hatch (112 Pac. R. 149) that only the mother or persons who have placed their hands on her body and felt the independent motion of the fetus can know whether or not it is quick. But if this were adopted as the iron-clad rule of evidence in such cases, the statute defining the crime of abortion would be practically impossible of enforcement after the death of the mother. The court prefers to hold that where physicians testify, as experts, to the measurements and appearance of a fetus found by them in the body of a deceased woman, and that from such measurements and appearance they each had an opinion as to the age of the fetus and as to whether the woman at her death was quick with child, it is competent to allow such witnesses to testify each to his opinion.

Proof of Amount of Earnings of Physician Not Necessary

The Court of Appeal of the Second District of California holds, in Washington vs. Pacific Electric Railway Co. (112 Pac. R. 904), that, in an action brought by a physician to recover damages for personal injuries, including damages for loss of earning power, the right to recover the latter is not dependent, under the decisions of that state, on proof of some specific or particular sum of money that had been or was at the time of the injury being earned by the plaintiff, where the evidence shows that the plaintiff was a practicing physician and several witnesses testify to having been attended at different times by the plaintiff professionally.

No Illegal Discrimination Against Hospital

The Supreme Court of California reverses a judgment recovered by the plaintiff, in Union Labor Hospital Association vs. Vance Redwood Lumber Co. and others (112 Pac. R. 886), an action brought against the defendant named and six other lumber companies to enjoin them from conspiring and combining together to vex, injure and destroy the hospital business of the plaintiff. The defendants, the court says, compelled every employee to consent to the deduction of $1 from his monthly wage, 12½ cents of which went into a contingent fund to help needy employees who might be injured and 87½ cents of which went to a hospital for an employee's ticket that entitled him to medical and surgical care and attendance in case of injury. The occupations of their men were dangerous. That provision should be made for the medical and surgical care of the men injured was most proper. No objection was made to this, nor to the means adopted to effectuate it, saving that the plaintiff contended that because its hospital was not on the list of enumerated hospitals from which the employees were authorized to make a selection, a species of unlawful discrimination was practiced against it. But the court does not agree with that, or, in other words, that there was an illegal boycott against the continuance of which the defendants should be enjoined.

There being no contractual relations between the plaintiff and the defendants, the defendants, individually or in combination, were under a duty only to refrain from inflicting a legal wrong on the plaintiff. Unquestionably there was nothing illegal in the measures employed by the defendants. The suasion or intimidation or coercion was purely moral, and went no further on the part of the defendants than a refusal to employ or to retain in their employ any one unwilling to comply with their hospital regulation. This was purely a matter between employer and employee, and, where no contract between them stands in the way, it is the unquestioned right of an employer to discharge at his pleasure, or to impose conditions on the retention of the employee in his employment.

The court is unable to perceive where any element of monopoly entered into this case, as the plaintiff claimed. The defendants had the undoubted right to deal with any hospital which they might select. In fact, they were dealing with four, and they were not even prohibiting their men from engaging the services of the plaintiff. That is, the defendants insisted merely that the employee buy a ticket in one of their designated hospitals. Then he was at liberty to buy an additional ticket in the plaintiff's hospital, though, in the nature of things, an employee having purchased a ticket in another hospital would not be likely to lay out more money for such a purpose. And since the acts of the defendants were within their legal rights, the motive for those acts was not a subject of inquiry.

Liability of Company Requiring Injured Person to be Taken to Physician

The Supreme Court of New Jersey holds, in Perkins vs. Trenton Street Railway Co. (78 At. R. 666), that where a printed rule of a trolley company required the conductor of a car in case an accident should occur to take the injured person to a physician, and the motorman met with an accident by which his leg was crushed, and the conductor telephoned to the plaintiff, a physician, who came and amputated the limb, the company was liable on contract to the physician for the value of the service thus rendered.

The court says that the requirement of the rule that when an accident occurs, and necessity for it exists, the conductor shall take the injured person to a physician is meaningless, unless it means that the physician is to render the professional aid necessitated by the accident. The court thinks that this is its meaning and that services of such a character when so rendered are rendered to the company through its duly authorized agent. The authority to take the injured person to the physician of course carries the authority to call the physician to the injured person.

The rule or instruction not making any distinction as to cases of accidents for which the company is not liable, the court, on reflection, thinks that no such distinction can be made in view of the ground on which the rule or instruction itself must be supported as a reasonable exercise of corporate regulation. The directors of the company will be presumed to have framed and promulgated this instruction in the interest of the stockholders. From this point of view they may well have considered that for every injury resulting from an accident in their cars a lawsuit is possible, in the course of which their liability would for the first time be authoritatively determined. If liable they may be deemed, from their knowledge of human nature, to know that the damages assessed by the jury would as a rule be largely enhanced by any show of inhumanity toward the plaintiff at the time of his injury, or any lack of immediate care for him at that critical juncture, and also that humane aid promptly secured by the company would be a circumstance likely to affect the jury favorably. The directors also knew, unless blind to the details of their business, that it is of the utmost importance in litigated accident cases that the medical witness who first sees and ministers to the injured person should not be one selected and paid (or to be paid after the suit) by such person, and still more that such witness shall not be selected by the attorney who prosecutes the suit for damages. A rule that would in all cases tend to secure unbiased testimony on this important feature of every such litigation would be an exercise of sound discretion by the directors.

This answers the objection that it is no part of the directors' duty to provide medical attendance for persons for whose injuries the company is not liable. For such liability cannot be determined at the instant of the accident, and that is the instant at which the conductor is required to act. So that in view of the reason suggested for such rule it would be a sound exercise of discretion for the directors to incur the slight expense in those cases in which it was ultimately determined that the company was not liable in view of the far greater importance of the results flowing from such rule in cases where the question of damages was involved. For the same reason, and to the same end, the rule should not be interpreted, or rather frustrated, by making the conductor pass as judge and jury on the law and facts of an accident at the instant of its occurrence as the basis of his private judgment as to whether or not it came within the rule that prescribed his duties in case of an accident.

Regarding the case, therefore, as one in which the injured person was guilty of contributory negligence, or such as would bar his right of recovery against the company, the court thinks that that circumstance affected neither the interpretation of the company's rule nor its legal effect on the agency of the conductor.

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

Am. Assn. Genito-Urinary Surgeons, New York, May 1-3.
American Dermatological Association, Boston, May 25-27.
American Gynecological Society, Atlantic City, May 23-25.
American Laryngological Association, Philadelphia, May 29-31.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Therapeutic Society, Boston, May 11-13.
Arizona Medical Association, Bisbee, May 2-3.
Arkansas Medical Society, Fort Smith, May 2-5.
Association of American Physicians, Atlantic City, May 9-10.
Connecticut State Medical Society, Hartford, May 24-25.
District of Columbia, Medical Association of, Washington, April 25.
Florida Medical Association, Tallahassee, May 10.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Kansas Medical Society, Kansas City, May 3-5.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maryland, Med. [illegible] Faculty of, Baltimore, April 25-27.
Missouri State " [illegible] Jefferson City, May 16-18.
Montana State " [illegible] Butte, May 10-11.
Nebraska State Medical Association, Omaha, May 2.
New Hampshire Medical Society, Concord, May 11-12.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular Meeting, held Wednesday, March 8, 1911

The President, Dr. C. B. Longenecker, in the Chair

SYMPOSIUM ON NEPHRITIS

The Chemistry of Nephritis

Dr. Howard T. Karsner read a paper reviewing the status of the chemistry of nephritis in reference to the metabolism and the urinary changes in the various forms of non-suppurative inflammations of the kidney and presenting the chemistry of uremia and edema. The paper will appear in The Journal.

Symptomatology and Diagnosis of Nephritis

Dr. John F. Roderer: Bright's disease in my opinion should be divided into: (1) parenchymatous nephritis, (2) the so-called chronic interstitial nephritis. Parenchymatous nephritis, which is essentially a disease of the kidneys, is divided into the acute and chronic forms, and the principal diagnostic symptoms are connected with the urine. The diagnosis of chronic interstitial nephritis can be made, I believe, without any examination of the urine, by the continued high blood-pressure caused by the diseased blood-vessels, and the altered function in the heart, eye, kidneys and other organs, the result of the diseased arteries and high-blood pressure. I am convinced that the condition called chronic interstitial nephritis is not essentially or primarily a disease of the kidneys, but an inflammatory disease of the arteries, possibly principally the terminal arteries. Chronic arterial fibrosis would be a better term. It is true that in this disease the kidneys become affected, but so may every other organ of the body. I am of the opinion that the retention of urea in the system in this disease acts only as an overdose of opium, and that uremia is given credit for some of the symptoms to which it is not entitled. The disease of the blood-vessels and the high blood-pressure will explain all the other symptoms. The brain as well as the kidneys suffers in this disease. The heart suffers most. The disease is insidious in its onset, and may exist for years without giving rise to serious symptoms. A patient may consult the physician for indigestion, headache, failing vision, shortness of breath on exertion, or a general lassitude, and any one of these symptoms may be the first evidence of the disease. Given any one of these symptoms in a patient past middle life engaged in mental labor, and inclined to worry, a thorough examination should be made. The eye is the one organ which will confirm the existence of this disease long before the evidence is shown by the kidneys. There may be normal vision with the presence of retinal lesions.

Operative Treatment of Bright's Disease

Dr. Morris Booth-Miller: In my opinion, the question resolves itself somewhat as follows: First, there is no scientific justification for the assumption that surgery, or anything else, can cure nephritis once it is established. Second, the majority of the theories which have been advanced to warrant surgical interference have not been very convincing, to say the least. A constantly growing mass of clinical data, which is deserving of the closest scrutiny, tends to show, however, that the physiologic cure of Bright's disease through remission may be brought about by operation. Despite an immediate mortality of about 30 per cent., and a mortality of 44 per cent. within a short period, the results of the operative treatment have been hopeful when the desperately ill condition of many of these patients is taken into consideration. The reported cases, now running into many hundreds, show a striking number of recoveries, some of which can only be described as brilliant, and it is not surprising that nearly three-fourths of the surgeons who have expressed opinions are favorably disposed and satisfied with their results. I believe that nephrotomy in these cases does good and often saves life, because it does, and does abruptly and thoroughly, certain things which are within the mental horizon of every medical student whenever he thinks of nephritis. I believe that cutting down on the kidneys accomplishes all the purposes of cupping and bloodletting, and does it better, because it tends to relieve the disturbance at its focal point. Just as in intestinal obstruction the sympathetic nerve impulses create violent peristalsis to overcome the obstruction, so we may have in anuria and uremia intense local vasomotor efforts to overcome the renal block. Furthermore, the removal of the capsule seems wise. No man can say just what part is played in a case of suppression by the edema within the kidney itself, and decapsulation certainly offers an outlet. For this reason I believe with Harrison that drainage should always be done in these cases. There may be other explanations for the value of surgical interference in restoring renal equilibrium based on more precise knowledge of urinary physiology, but for the present these seem sufficient. It is in cases in which hypertension, local and general, and edema are the predominant phenomena that the most successful results have been obtained, while the least satisfactory subjects for the knife have been those whose kidneys were caught in the death-grip of interstitial change. Particularly apt has been the operation in saving life in the severe form of nephritis complicating and following the actue exanthemata, of which scarlatinal nephritis may be mentioned as a type. The results in chronic parenchymatous and, to a minor extent, in diffuse nephritis, have been less satisfactory. Those cases in which the cardiovascular changes are marked are the least favorable of all. Nephritis is and must remain a medical entity, and it is not until medical measures have been given a fair trial and have failed that we are justified in considering surgery. When that time comes, the following fairly well-defined principles may be borne in mind for guidance in the individual case: First, operation may be hopefully done in acute nephritis; second, young patients are the best subjects; third, there is sound reason for operating for anuria or uremia occurring in chronic nephritis; fourth, operation may be resorted to as a last desperate chance in any form of nephritis.

DISCUSSION

DR. HENRY K. PANCOAST: The use of the x-ray examination in connection with kidney disease is rather closely limited to the diagnosis of calculus in the kidney or ureter, and to the determination of alterations in the position or size of the kidney. Considering the number and variety of the factors that may affect the accuracy of the x-ray diagnosis, it is almost remarkable that the percentage of error is as low as it is. Fortunately, the most frequent sources of trouble may be overcome, guarded against or eliminated. The various sources of error may be classified in somewhat the following manner: Obesity; inadequate preliminary preparation of patient; conditions of the abdomen or pelvis which offer shadows of unusual density; surgical dressings, drainage tubes, etc.; the presence of unusual conditions causing shadows that may simulate those of stones in the kidney or upper portion of the ureter; misplaced or supernumerary kidneys or ureters; conditions or objects which may, by their shadows, lead to error or confusion in the diagnosis of calculus in the lower portion of the ureter; certain anatomic structures, as in the case of stones obscured by the shadows of the pelvic bones and the lower ribs; the consistency of the calculus; lack of adequate clinical knowledge of the case on the part of the examiner. The fact should not be overlooked that it is possible for a stone to be present without producing a perceptible shadow on the radiograph, because pure uric-acid calculi possess such a slight degree of density that they may not produce a distinguishable shadow in any but a thin individual. The modern technic of the examination for renal calculus requires some knowledge of the clinical aspect of the case on the part of the examiner, and the physician who refers the case adds to the possibility of error in failing to supply the necessary data. As a further safeguard against mistakes, it is wise to confirm the findings of a positive examination before submitting the patient to an operation for the removal of a calculus.

DR. B. A. THOMAS: Until we learn more about the kidney along the line of physiologic chemistry, I think not much advance will be made in the investigation of this disease.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 5

1 Disorders of the Stomach and Duodenum, Especially Ulcers. W. J. Mayo, Rochester, Minn.
2 Duodenal Ulcer. F. W. White, Boston.
3 Present Treatment of Gastric and Duodenal Ulcer. A Review of the Recent Literature on the Subject. C. Frothingham, Jr., Boston.
4 Indications from a Medical Standpoint for Operative Procedures in the Presence of Chronic Gastric Symptoms. M. V. Tyrode, Boston.

New York Medical Journal

April 8

5 Growth and Development of the Training School for Nurses of the New York Hospital. G. L. Peabody, New York.
6 Study of Fats and Lipoids in Animal Tissue. J. Wright, New York.
7 Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens, New York.
8 Psycho-Analysis as a New Therapeutic Procedure in Psycho-Neuroses. A. Gordon, Philadelphia.
9 Ozone. M. W. Franklin, Schenectady, N. Y.
10 Sodium Cacodylate in Syphilis. O. L. Suggett, St. Louis.
11 Id. H. A. Schirrmann, Portsmouth, Ohio.
12 Rabies. J. A. McLaughlin, New York.
13 Morphinism and Morphinomania. F. McK. Bell, Ottawa, Canada.

Lancet-Clinic, Cincinnati

April 1

14 *A New Principle in Treatment of Hyperthyroidism. G. W. Crile, Cleveland, Ohio.
15 *Blood-Findings in Lymphatic Leukemia. H. L. Woodward, Cincinnati.
16 Indications for Nephrectomy. E. O. Smith, Cincinnati.

14. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

15. **Blood Findings in Lymphatic Leukemia.**—In Woodward's case the left axillary lymph nodes became swollen and suppurated three years ago. They were incised; following this they remained enlarged. One year ago the glands of the right axilla became enlarged also, and soon after those of the neck and groin began to enlarge. In April, 1909, the patient, a woman of 65, was confined to bed for one week, with fever ranging from 100 to 101 F. She complained chiefly of weakness. On May 23, 1909, a blood examination gave the following results: hemoglobin, 48 per cent. (Dare); reds, 2,880,000; whites, 781,000; differential count of 1,000 white cells gave small lymphocytes, 98.6 per cent., 770,060 per c. mm.; large lymphocytes, 0.9 per cent.; 7,030 per c. mm.; polynuclear nutrophiles, 0.5 per cent., 3,900 per c. mm. No nucleated reds were seen in counting 1,000 whites, but careful later search showed a very few. Color index was 0.84. Fowler's solution was started at once, 3 drops, later increased to 10 drops, being given, thrice daily. December 10, 1909, just two weeks before death the blood examination was as follows: hemoglobin, 35 per cent. (Dare); reds, 2,600,000; color index, 0.67; whites, 1,406,000. Differential count of 1,000 whites: small lymphocytes, 7.8 per cent., 109,670; polymorphonuclear neutrophiles, 1.3 per cent., 18,280; transitionals, 0.1 per cent., 1,400. Two normoblasts seen in counting 1,000 whites, or 2,800 per c. mm.

A study of the blood in this case is of interest from several standpoints. On the day of the first examination, May 23, it gave the typical picture of a chronic lymphatic leukemia, the tremendous increase in the small lymphocytes being the most marked feature. Most of these cells were smaller than the red cells, had almost no cytoplasm, and their nuclei stained very deeply with Wright's stain; a smaller number were about the size of a red cell, or slightly larger; they had a somewhat greater amount of cytoplasm, which was very faintly blue, and a deeply-staining nucleus, not quite so dark as the first variety. A third variety of small or intermediate lymphocytes, slightly larger than the red cells, showed a narrow rim of cytoplasm which had taken the stain more deeply than the nucleus, which was concentrically placed and stained light blue; it frequently showed a nucleus. Numerous irregular masses, stained a purplish-blue, were undoubtedly small lymphocytes of the larger varieties which were artificially broken down in making the smears, for they were not seen in the first preparations and were much less numerous in thick smears than in thin ones. The large lymphocytes were only present in very small numbers in this first preparation, and differed only in size from the last-named varieties. Polymorphonuclear neutrophiles were present only in very small numbers, being absolutely as well as relatively decreased. The red cells showed a picture of a moderate anemia of the secondary type, the cells being practically normal in appearance, though somewhat paler than normal. A very few normoblasts were found after prolonged search. On December 10 the white cells had increased in numbers enormously, 1,406,000 per c. mm., the highest white count of which Woodward has found any record in the lymphatic type. The character of the cells had changed also. The large forms of lymphocytes were much more numerous, relatively and absolutely, than in any of the previous specimens. They had, as a rule, a large nucleus rather faintly stained, with a broad surrounding mass of cytoplasm staining only slightly. The small lymphocytes were mostly of the larger types also. One large lymphocyte was seen with a double nucleus, each portion of which showed a nucleolus. Some of the larger lymphocytes were vacuolated. The red blood-count remained almost stationary throughout. Nucleated reds were very rare except in the last count, when 2 were seen in counting 1,000 white cells. The hemoglobin index was persistently minus, except during a reactionary period in September, when it was 1.26, and in the next examination, when it was 1.11. None of the rod-shaped bodies, described by Auer and Ottenberg in acute leukemia, were found in any of the lymphocytes.

Wisconsin Medical Journal, Milwaukee

March

17 Rabies in Wisconsin. M. P. Ravenel and B. W. Hammer, Madison.
18 The Smith Operation for Extraction of Cataract in the Capsule. G. I. Hogue, Milwaukee.
19 Reconstruction of the Bile Ducts. A. S. Sullivan, Madison.

20 Value of Blood-Cultures in Puerperal Fever. *J. S. Evans*, Madison.
21 Development and Value of the Blood Culture in Typhoid. G. C. Ruhland, Milwaukee.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March

22 Physiologic Action of Sodium Chlorid. D. R. Joseph and S. J. Meltzer, New York.
23 Distribution of Hemolysins, Agglutinins and Poisons in Fungi, Especially the Amanitas, the Entolomas, the Lactarius and the Inocybes. W. W. Ford, Baltimore.
24 *The Site of Action of Strychnin in the Spinal Cord. A. H. Ryan and H. McGuigan.
25 *Control of Strychnin [illegible] Intratracheal Insufflation and Ether. T. S. [illegible] tzer, New York.
26 Inhibitory Action of [illegible] e Phenomena Following the Remova [illegible] in Dogs. D. R. Joseph and S. J. Meltzer, New York.
27 Physiologic Studies in Anaphylaxis: Microscopic Study of the Anaphylactic Lung of the Guinea-Pig and Mouse. W. H. Schultz and H. E. Jordan.

24. *Site of Action of Strychnin.*—It was found by the authors that when the lower half of the spinal cord is poisoned by the transfusion method, spasms confined entirely to the lower half of the animal occur when the skin of that region is stimulated. The spasms then become spontaneous in the lower half of the animal. As the poisoning increases the spasms become general, occurring in the upper unpoisoned half when the lower half is stimulated. Spontaneous general spasms then ensue. If at this stage the spinal cord is cut at a level just between the poisoned and unpoisoned portions the spasms cease in the upper half of the animal while they continue below, indicating that the upper half is unpoisoned. An injection of strychnin subsequently into the upper part of the animal again throws it into spasms. If the poisoning be more gradual, as obtained by directly applying strychnin to the spinal cord in different regions, the symptoms of strychnin poisoning are slower to develop and stages intermediate to those just described occur, beginning with exaggerated reflexes and ending with spontaneous spasms, but always localized in the beginning to the poisoned region. Later symptoms are manifested in unpoisoned regions. In an animal in a state of complete general strychnin poisoning, occlusion of the aorta was, of course, followed by a disappearance of symptoms below the point of occlusion.

After the aorta was released, a time came when stimulating the skin above the point of occlusion was followed by general spasms (both upper and lower limbs) while stimulating similarly below the point of occlusion gave absolutely no response. When either the lumbar or the cervical region of the spinal cord is poisoned with strychnin an increase in the excitability of the poisoned area is observed when the corresponding area of the motor cortex is stimulated. The same result is obtained if the posterior roots in the poisoned area are severed. If strychnin is applied to the cervical region of the cord until that region is thoroughly poisoned so that stimulation of the skin of that region causes a general spasm, and then all of the posterior roots are severed, it is found that stimulation of the fore leg area of the cerebral cortex will cause a spasm of the fore legs but none elsewhere. The stimulus required to bring about this result is weaker than that required in the beginning to cause a mere twitch, and is also weaker than that required to cause a twitch of the hind leg on stimulation of its center in the cortex at the time the cervical region is poisoned.

25. *Control of Strychnin Poisoning.*—*On the* basis of their experimental experience it seems to Githens and Meltzer that ether anesthesia, intratracheal insufflation and intravenous infusion of Ringer's solution, offers a very effective method of treatment for strychnin poisoning in animals. They see no reason why it should not be available also in cases in human beings.

American Journal of Urology, New York

February

28 The Normal and Pathologic Posterior Urethra and Neck of the Bladder. L. Buerger, New York.
29 Massive Destruction of the Urethra After a Succession of Attempts to Restore It in a Case of Hypospadias. G. A. DeS. Saxe, New York.
30 Sexual Neurasthenia: Its Local and Hydrotherapeutic Treatment. M. Porosz, Budapest.
31 Catheter Left in the Deep Urethra and Bladder After Operation of External Urethrotomy. H. J. Scherck, St. Louis.
32 Massage of the Prostate. [illegible] Greenberg, New York.

American Medicine, New York

March

33 A Morning at Bier's Clinic in Berlin. H. G. Watson, New York.
34 Quinin: *Its History and Preparation of Its Alkaloids.* J. J. Sheridan, New York.
35 The Oral Laboratory. C. E. Field, New York.
36 An Appeal to All Men of Honor of the *Medical Profession* of America. A. Rose, New York.
37 Posttyphoid Bone Abscess. H. Lilienthal, New York.
38 Colds and Catarrh. I. M. Heller, New York.
39 Dosage to Effect. W. F. Waugh, Chicago.
40 Action of Animal Extracts on Intestinal Movements. I. Ott *and J. C. Scott, Philadelphia.*
41 The Dispensary Evil and Its Consequences. W. G. Wulfahrt, New York.
42 **A Tonsillotome Improvement.* T. H. Shastid, Marion, Ill.
43 Sir Walter Raleigh's "Royal Cordial." J. Knott, Edinburgh, Scotland.

42. **A Tonsillotome Improvement.**—This is an ordinary Mathieu's tonsillotome with an *improvement consisting in two* anterior pillar hooks, or retractors, 3/8 of an inch in length, either straight *or very slightly curved*, probe-pointed, and soldered to the anterior margin of the fenestra on the side of the instrument opposite to the impalement-fork—in other words, on the side next the wall of the throat. The hooks diverge somewhat as they leave the instrument, being 4/8 of an inch apart where soldered to the tonsillotome and 5/8 of an inch apart at their probe-pointed extremities. These hooks or retractors are used in the following manner: The anterior pillar is of course, if necessary, first thoroughly separated from the tonsil, and then, the *tonsillotome having* been introduced into the throat, first the lower hook, or retractor, and then the upper, is inserted into the space between the pillar and the tonsil. The instrument is slightly drawn forward, and then the instrument is *pressed round the tonsil, and the* ablation completed in the *customary manner.*

Memphis Medical Monthly

February

44 Treatment of Acute Suppurative Otitis Media. W. L. Simpson, Memphis.
45 The Clinical Side of Fibroid Tumors of the Uterus, with a Brief Description of the Perfected Operation for Cure of This Condition. F. D. Smythe, Memphis.
46 Treatment of Fibroid Tumors of Uterus. W. T. Black, Memphis.
47 Pathology, Degeneration and Complications of Uterine Fibroids. O. S. McCown, Memphis.
48 Technic of Cholecystotomy. J. A. Crisler, Memphis.

Annals of Surgery, Philadelphia

April

49 *Injury as a Causative Factor in Cancer. W. B. Coley, New York.
50 *The Abduction Treatment of Fracture of the Neck of the Femur in Elderly Subjects. R. Whitman, New York.
51 *Fractures of the Shaft of the Femur with Marked Displacement. R. H. Harte, Philadelphia.
52 *Fracture of the Patella. E. G. Alexander, Philadelphia.
53 *Nephro-Ureterectomy. H. Lilienthal, New York.
54 Technic of Operative Treatment of *Appendicitis.* A. B. Johnson, New York.
55 *Diverticulitis of the Rectum. H. Z. Giffin, Rochester, Minn.

49. Abstracted in The Journal, Jan. 14, 1911, p. 142.

51. *Fracture of Shaft of Femur.*—*Harte suggests* finding out all that is possible about the seat of the fracture by the use of carefully prepared Roentgen-ray plates, the pictures to be taken at various angles. The operator should consider carefully what method is likely to give the best results. When the fragments are exposed, the diameter of the bone should be determined with a pair of calipers. In *no case* should the screws penetrate the opposite side. Suitable instruments, proper drills and screws, and competent *assistants* should be at hand so that the operation can be completed quickly and with as little destruction to the soft parts as possible. Before closing the wound the operator should see that it is thoroughly dry and that all dead spaces are obliterated, so that there will be no possible chance for the development of a small hematoma, which is so conducive to later infection.

52. **Fracture of the Patella.**—The point emphasized by Alexander in the operative technic is the advantage of the silver wire. Out of thirty cases that he has been able to follow, four refractured the patella; three of these were sutured with absorbable material. The one that refractured with wire was due to a fall downstairs, and so great was the strain thrown on the patella, that the wire cut through the upper fragment.

He regards silver wire as the most aseptic and at the same time the strongest suture material that can be used. The only disadvantage is that it occasionally has to be removed. Removal was necessary in three cases in this series. This undoubtedly can be avoided, provided no infection occurs, but even if skin infection—the most common in this operation—does occur, if the skin incision is well away from the line of the fracture, and if the ends of the wire are not left too long and are well covered by the tendon, fascia lata and prepatellar bursa, removal of the wire may not be necessary. If the wire has to be removed, however, it can easily be done with little inconvenience to the patient. That wire causes softening of the bone around the opening is highly improbable unless some infection occurs. Wire is certainly no more irritating than any other material used in these cases, as kangaroo tendon, chromic gut, or even, as has been used, silkworm gut.

53. **Nephro-Ureterectomy.**—Lilienthal describes a new method of operating which he devised.

55. **Diverticulitis of the Rectum.**—Giffin reports two cases in which operation was done. In one there was carcinomatous degeneration.

Journal of the Oklahoma State Medical Association, Muskogee

March

56 The Obliterated Appendix: Its Pathologic and Clinical Significance. A. L. Blesh, H. Reed and C. E. Lee, Oklahoma City.
57 The Medical Secret and Venereal Diseases. M. A. Warhurst, Sylvian.
58 Empyema. D. E. Broderick, Kansas City, Mo.
59 Thermogenesis. G. H. Thrailkill, Chickasha.
60 Physical Characteristics of the Negro. A. C. Hirshfield, Norman.
61 Cardiac Murmurs and Their Clinical Significance. L. J. Moorman, Oklahoma City.

New Orleans Medical and Surgical Journal

March

62 Importance of Regulating Diet in Treatment of Disease. A. Eustis, Abbeville, La.
63 Extirpation of the Lachrymal Sac. T. J. Dimitry, New Orleans.
64 Biography of Dr. Gordon King. O. Dowling, New Orleans.
65 Vocal Rest—Formol and the Galvano-Cautery in Treatment of Laryngeal Tuberculosis. H. Dupuy, New Orleans.
66 A New Method (Yankauer's) of Local Anesthesia in Tonsillectomy. A. L. Weil, New Orleans.
67 Mechanotherapy in Diseases of the Ear, Nose and Throat. O. Joachim, New Orleans.
68 Diphtheria in Children. E. M. Toler, New Orleans.

April

69 Obstinate Bone Cavities. W. M. Perkins, New Orleans.
70 *The Phenolphthalein Test for Occult Gastro-Intestinal Hemorrhage. J. A. Storck, New Orleans.
71 The Motais Operation as Performed at the Eye, Ear, Nose and Throat Hospital, New Orleans. T. J. Dimitry, New Orleans.
72 Present Status of Bacterial Vaccines and the Four Leading Serums. F. O. Northey, New Orleans.
73 A Very Severe Case of Lobar Pneumonia, with Delayed Resolution and Treatment Used. G. McG. Stewart, Laurel Hill, La.
74 Treatment of Pneumonia with Aconitin. J. T. Abshire, Leroy, La.
75 Tetanus Statistics. J. D. Bloom, New Orleans.

70. **Phenolphthalein Test.**—In his observation of the phenolphthalein test, Storck noted that whenever it gave a positive reaction, the benzidin test also proved positive. The benzidin test several times showed a positive reaction when the phenolphthalein, guaiacum and aloin tests were negative. In the experiments, from 2 to 5 c.c. of blood had been given once daily for forty-eight hours previous to the application of the test. It was found that when more than 15 c.c. of blood were ingested in forty-eight hours the phenolphthalein test always proved positive, but the guaiacum and aloin test often failed.

Denver Medical Times and Utah Medical Journal, Denver

March

76 Treatment of Inoperable Cancer of the Uterus. E. Lanphear, St. Louis.
77 Pregnancy with Unruptured Hymen and Vaginal Atresia. A. M. Ditson, Denver.
78 The Usual Care of Obstetric Cases at Mercy Hospital. T. M. Burns and J. C. Hutchison, Denver.
79 Obstetrical Complications. E. Stuver, Fort Collins, Colo.
80 Non-Surgical Treatment of Retrodisplacements of the Uterus. G. L. Monson, Denver.
81 Prevention of Blindness. F. Stauffer, Salt Lake City.
82 The Menopause. W. E. Waugh, Chicago.
83 Cancer as Known To-Day. I. Levin, New York.
84 Compulsory Notification of Venereal Disease. F. Clift, Salt Lake City.

Maryland Medical Journal, Baltimore

April

85 Korsakow's Syndrome—Cerebropathia Psychica Toxemica. A. P. Herring, Baltimore.
86 Reduction of Blood-Pressure by Phlebotomy—in Emergency. G. Timberlake, Baltimore.
87 Develop Sewerage Systems. W. J. Todd, Baltimore.
88 Ventilation of Schoolrooms. C. W. G. Rohrer, Baltimore.

Interstate Medical Journal, St. Louis

March

89 Bearing of Old and New Facts on Conceptions of Cardiovascular Disease. H. A. Hare, Philadelphia.
90 Autoserotherapy: Therapeutic Use of the Patient's Own Serous Exudates and Transudates. I. I. Lemann, New Orleans.
91 Present Status of Pneumonia. H. G. Beck, Baltimore.
92 The Use and Abuse of Tuberculin. W. V. Voorsanger, San Francisco.
93 Report and Analysis of a Goiter with Marked Intrathoracic Extension. N. W. Sharpe, St. Louis.
94 Salvarsan in Three Rebellious Cases of Syphilis. E. D. Holland, Hot Springs, Ark.
95 Primary Carcinoma of the Appendix. M. W. Myer, St. Louis.

Journal of Experimental Medicine, Lancaster, Pa.

April

96 *A Sarcoma of the Fowl Transmissible by an Agent Separable from the Tumor Cells. P. Rous, New York.
97 Treatment of Yaws (Frambesia) with Salvarsan. R. P. Strong, Manila, P. I.
98 *Cultivation in Vitro of the Thyroid Gland. A. Carrel and M. T. Burrows, New York.
99 *Cicatrization of Wounds in Vitro. E. S. Ruth, New York.
100 *Transfusion and the Question of Intravascular Agglutination. R. Ottenberg, New York.
101 Changes in Nitrogenous Metabolism After Parathyroidectomy. J. V. Cooke, New York.
102 Observations and Experiments on the So-Called Thyroid Carcinoma of the Brook Trout and Its Relation to Endemic Goiter. D. Marine and C. H. Lenhart, Cleveland.

96. A paper based on the same observations by the same author was published in THE JOURNAL, Jan. 21, 1911, p. 198.

98. **Cultivation in Vitro of the Thyroid.**—Since Sept. 22, 1910, the authors have cultivated the thyroid gland from mammals, many times. Small fragments of the gland were extirpated from living and anesthetized dogs, cats and guinea-pigs, and cultivated in the plasma obtained from the same animal or an animal of the same species. These cultures are distinguished as autogenic and homogenic. In all, they have now made fifteen series of cultivation experiments with the gland, each of the series being composed of from four to thirty separate cultures. The proliferated elements consist of connective tissue and epithelial cells, the former predominating. The cells survive in cultures for two weeks or longer, which period can be increased by secondary and sometimes tertiary cultivations. The authors call attention to the fact that the method of growing *in vitro* organs such as the thyroid may come to be used with advantage in the study of the substances concerned with the internal secretion of certain glands.

99. **Cicatrization of Wounds in Vitro.**—The process of the healing of a wound outside the body has been observed and recorded by Ruth in five experiments. The method of study consisted of making an incision or a rectangular wound in the middle of a small fragment of skin and cultivating it outside the body in a drop of plasma. The reparation consists of three mechanisms: the sliding of the epithelium from the edges of the wound into the open space, the epidermization and the progressive contraction of the original edges of the wound.

100. **Transfusion.**—This paper offers a solution of a special problem in isoagglutination; namely, the question whether transfusion is permissible between persons whose sera agglutinate the red blood-cells of each other. It also shows why such transfusions are not regularly followed by serious symptoms. Ottenberg found that intravascular agglutination can occur, and is the probable cause of occasional untoward symptoms, or even death, following transfusion of agglutinative blood. In the majority of cases, however, it does not occur, or if it does, it causes no symptoms. This is dependent on the influence of three factors: (1) concentration of the agglutinin; (2) absorption of the agglutinin by an excess of agglutinable cells; (3) interference with agglutination by an excess of non-agglutinable cells, so that when clumps occur they are microscopic in size. If, for a given transfusion, a non-agglutinative donor, i. e., a donor whose blood is of the same agglutinative class as the patient's, cannot be obtained, then

it is safer to use a person whose serum is agglutinative toward the patient's cells than one whose cells are agglutinated by the patient's serum. Ottenberg suggests that tests for agglutination as well as for hemolysis, ought to be made before transfusion. When time does not permit this, one has to weigh the possible dangers of agglutination or hemolysis against the dangers of letting the patient go without transfusion. Agglutinable cells when transfused are taken up by the phagocytes in the patient's blood; and, for this reason, the transfusion of agglutinable blood, even when no accident happens, can be expected to do little permanent good.

Ophthalmic Record, Chicago

March

103 Acute Retrobulbar Neuritis Caused by an Intestinal Toxemia. F. P. Calhoun, Atlanta, Ga.
104 Excretion of Hexamethylenamin into the Anterior Chamber of the Eye. H. S. Gradle, Chicago.
105 Two Cases in which the Roentgen Ray Failed to Locate a Foreign Body Afterward Shown to Be Present in the Eye. R. L. Randolph, Baltimore.
106 Treatment of Scleritis and Pterygium. E. R. Carpenter, El Paso, Texas.
107 Conjunctivitis with Ulceration of the Cornea, Due to the Bacillus Pyocyaneus. H. McKee, Montreal.
108 Congenital Pigmentation of the Cornea. H. V. Tweedie, Baltimore.
109 A Case of Herpes Zoster Ophthalmicus. W. T. Wallace, Berlin, *Ontario.*
110 Mixed Irregular Astigmatism Following Injury to the Eye. R. S. Lamb, Washington, D. C.
111 Toxic Paralysis of Accommodation. H. F. Hansell, Philadelphia.
112 An Expensive Pocket Transilluminator. H. Lowell, Boston.

Kentucky Medical Journal, Bowling Green

April 1

113 Conservative Surgery. I. Abell, Louisville.
114 Gall-Stones. B. F. Van Meter, Lexington.
115 How Shall We Improve Public Health Matters in the County? S. Griffin, Henderson.
116 Natural Defenses of the Body. D. O. Hancock, Henderson.
117 Hysteria: Its Symptoms, Etiology, Prognosis and Treatment. J. C. McCreary, Cave City.
118 Minor Eye Troubles. T. O. Helm, Bowling Green.
119 Management of Acute Appendicitis. *P. C. Layne, Ashland.*
120 Appendicitis. W. K. Smith, Adairville.
121 Typhoid. J. E. Payne, Paducah.
122 Chronic Rhinitis. H. C. Beazley, Hopkinsville.
123 Atropin: Its Physiologic and Therapeutic Effect. E. Harthill, *Pewee Valley.*
124 The Courteous Physician. W. Salin, Owenton.
125 A Plea for an Early Diagnosis of Pulmonary Tuberculosis. E. Morris, Sulphur.
126 Prostatic Hypertrophy. A. P. Dowden, Eminence.
127 *Treatment of Dysentery. P. F. Barbour, Louisville.
128 Congenital Absence of the Genital Organs, Including the Clitoris and Vagina. A. H. Barkley, Lexington.
129 Vis Medicatrix Naturæ. D. G. Simmons, Adairville.
130 Tonsillectomy: The Tonsils and Their Removal. W. S. Gabhart, Mackville.
131 Can Typhoid be Aborted? W. W. Lasley, Lewisburg.
132 Placenta Prævia. D. G. Simmons, Adairville.
133 The Onward Movement in Medical Organization. B. F. Fyke, Springfield, Tenn.
134 *Pseudomembranous Croup.* T. C. Nichols, Morgan.
135 Splenic Leukemia. E. D. Sellers, Fisherville.

127. **Treatment of Dysentery.**—After castor oil has been given and the bowels thoroughly moved, Barbour says that some astringent like bismuth subnitrate may be prescribed, 10 grains every *two hours until* the stools are dark and the frequency diminished. If the stools are not discolored by the bismuth then he would give zinc sulphocarbolate in ½-grain doses every two hours. If there is no fever then small doses of Dover's powder may be given, but usually will not be found *necessary if* there has been a thorough emptying of the bowels. When there is blood in the stools, bichlorid of mercury, in 1/150-grain doses should be given every two hours until the stools show some bile, when the bismuth may be substituted. For the cramping, the tormina and tenesmus hot applications over the stomach *will give great comfort.* Hot flaxseed or a glycerinized paste will be helpful. Warm enemata will help relieve the straining, sometimes starch and laudanum eases those cases in which the rectum is very congested and apt to prolapse with the stool. Occasionally, suppositories containing *opium and* belladonna will quiet this intense activity. Or the *official liquor antisepticus* alkalinus well diluted with warm water as a *colon douche* will deplete the inflamed area. With more extensive experience Barbour has grown to use the astringents less and less, for the removal of the fermenting and putrefying mass from the bowel has nearly always stopped the diarrhea. To gain this end the following prescription has been found *very useful* by him:

℞	gm. or c.c.		
Olei ricini	8	or	ʒij
Pulveris acaciæ	q. s.		
Syrupi rhei aromatici	30		℥i
Misturæ cretæ q. s. ad	60		℥ii

M. Fiat. emulsio. Sig. One teaspoonful every two hours.

When the character of the stools show that the upper bowel has been unloaded there will be a great improvement in the condition of the child. Then the astringents may be administered with benefit but will not always be found necessary.

Washington Medical Annals

March

136 Progress of Gynecology in 1910. J. W. Bovée, Washington, D. C.

Medical Fortnightly, St. Louis

March 25

137 Influence of the Mind on Health and Disease. L. H. Lanier, Kansas City, Mo.
138 Gases in Their Relation to the Body. A. L. Benedict, Buffalo, N. Y.
139 Abortive Treatment of Gonorrhea. W. R. Jamieson, Torreon, Coah., Mexico.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

March

140 Acromegaly: *Pierre Marie's Disease.* P. E. Launois and M. H. Cesbron, *Paris, France.*
141 Scope and Value of the Blood-Pressure Test. F. A. Faught, Philadelphia.
142 Etiology and Treatment of Gout. A. Bassler, New York.
143 Effect of Alcohol on the Heart Muscle. A. W. Downs, Philadelphia.
144 *Use of Oxygen Baths. A. Bernheim, Philadelphia.
145 *The United States Pharmacopeia. M. H. Fussell, Philadelphia.
146 The Metric System. E. H. Long, Buffalo, N. Y.

144. **Oxygen Baths.**—The use of the oxygen bath in a great variety of affections is advocated by Bernheim. He says that in addition to exercising a powerful suggestive influence, the oxygen bath exerts an effect on the innervation as shown by its removal of parasthesias, its soporific property, and its general sedative and indirectly stimulating action. It assists the circulation, deviating the blood from the skin and doubtless from the viscera, very probably to the skeletal muscles. It reduces excessive blood-pressure and the frequency of the pulse as well.

145. **United States Pharmacopeia.**—Fussell protests against the presence in the Pharmacopeia of such combinations as pulvis acetanilidi compositus. The best method of prescribing acetanilid and caffein is to give to each individual for whom these drugs are used the dose necessary for that individual, and for the particular condition present at the time the patient is seen. This cannot be done if a fixed formula is used, even though, of course, one may use different doses at different times. It is manifestly impossible for anyone to tell before a case is seen just what dose of the drug is necessary. To advise *the* use *of compound* remedies is *to confirm* slipshod, improper methods of prescribing. On this principle, fixed formulas should not be used. If it is not correct principle to use fixed formulas, then they surely should be expunged from the Pharmacopeia.

Still another point made by Fussell is the following: The Pharmacopeia to-day contains certain drugs, their preparations. the method of manufacturing them, their doses, *their* description, and in certain instances, tests *for their purity* and assay. As the book stands, therefore, it is manifestly of great use to the *pharmacist.* Its only use to the general practitioner is the knowledge it gives him of what is supposed to be useful in drugs and their doses. It gives no hint of *their indications* or contraindications, of their toxic or non-toxic properties. All this knowledge he must perforce get from *other* books, or from manufacturing chemists. He can get reliable information from the various publications on materia medica or from the dispensatories, *and he does get some from* these sources; but, sad to relate, most of the *information* as to drugs which the average physician now obtains after *graduation* is from manufacturing drug firms, in the *form of more* or less well-written literature, accompanied by samples and often supplemented by the glib-tongued detail man. Fussell has had described to him the treatment being carried *on* in certain cases, and has been able to *recognize* but *few of* the articles used, because they were prescribed under *trade* name-of which he was entirely ignorant. One reason why the drug firms, with their literature and instructed agents, are such potent powers in grounding the young physician as to the means he should use in prescribing is because that method is easy and is brought immediately to his attention, whereas the knowledge of materia medica is more or less difficult to attain. Another reason is because the medical schools are not insistent enough in teaching their students that the only proper method to pursue in prescribing drugs after they become practitioners of medicine is to hold fast to that which has been proved of value, and to accept new remedies only after their usefulness has been attested by men of standing by methods of value. Therefore, he continues, if the next issue of the Pharmacopeia is made to contain the therapeutic indications of the drugs recommended for use, it will be of some practical value to the practicing physician. If this should make the volume too bulky, two volumes might be printed; one after the style now in use, and the other to contain the names of the drugs, their description, their dose, and a short description of their therapeutic use.

Vermont Medical Monthly, Burlington

March

147 Practical Points on Diagnosis and Treatment of Diseases of the Upper Abdomen. S. E. Maynard, Burlington.
148 Management of Patients with Sugar in the Urine. C. H. Beecher, Burlington.
149 Principles and Application of Serotherapy and Bacteriotherapy. B. H. Stone, Burlington.

Bulletin of the Manila Medical Society

February

150 *A Case of Masked Tertian Malarial Fever with Marked Mental and Nervous Manifestations and with Unusually Few Parasites in the Peripheral Circulation. W. E. Musgrave, Manila.
151 An Effort on the Part of the Bureau of Health to Improve the Milk Supply of Manila. C. Fox, Manila.

150. **Masked Tertian Malarial Fever.**—At the age of 14, Musgrave's patient had a moderate attack of chills and fever, which recurred at irregular periods for about one year. At the age of 21, he suffered an attack of pleurodynia, following exposure, which kept him in bed for about five days. When 25 years old, he was attacked by bronchitis, which, however, was so mild as not to confine him to bed. At 29 and 31 years of age, there were attacks of influenza, moderate in severity, confining him to bed for about one week in each case. At 35 years of age, he had diarrhea, which lasted for about two weeks and did not incapacitate him for duty. In 1897, there was an attack of intermittent fever ushered in by a chill, two other chills occurring during the first ten days. Malarial parasites were not found. Following this illness, he began to be troubled with palpitation of the heart, shortness of breath on exertion, indefinite rheumatic pains occasionally in the fingers, but no swelling or fever. About this time he began to be troubled with nervousness, inability to think on a definite subject for any length of time, insomnia, and worry over petty details. In July, 1897, he was granted sick leave for nervous debility and rapid heart action; this leave was later extended on other certificates to November. During this time, in addition to periodic attacks of intermittent fever, the general nervous condition failed to improve much and he began to be troubled with a suffocating sense of oppression in the chest and throat. At times there were spells of dizziness. In the fall of 1898, jaundice of a severe type developed and lasted for about four months. The jaundice came on gradually and was accompanied by pain and tenderness over the liver and abdomen. During the latter part of this trouble, chills and fevers developed, lasting for about three days, and a few tertian malarial parasites were found.

From about July 1 to Aug. 12, 1899, there was mild continuous fever. While on sick leave convalescing from this attack, he was exposed to the hot sun for some time and suffered with a recurrence of the old symptoms, insomnia, burning oppressive headache, palpitation of the heart, weakness, general debility and nervousness; and in addition had fever again, which lasted for a week or two, but no chills. His condition again improved and on arrival in the Philippine Islands in October, 1909, his general health was fairly good. The hard duties and the trying climate of the tropics, however, soon caused a return of the old symptoms. The mental phenomena became very marked and the patient made application to be retired on account of mental and physical debility, stating that he believed himself insane. While under observation after this application, he suffered from two attacks of fever, one of them accompanied by jaundice, but malarial parasites were not found. He was finally invalided to America with a diagnosis of melancholia and severe cerebral neurasthenia.

On returning to the United States, he was again placed under observation in one of the large hospitals. While there, he had two or three attacks of fever of an irregular type; but again malarial parasites were not found. He made a second application to be retired for mental and physical disability and the hospital authorities recommended that he be transferred to an insane asylum. Instead, however, he was transferred to the Army and Navy General Hospital, Hot Springs, Arkansas, for further observation and report. On admission, the patient complained of a constant feeling of mental and physical depression and difficulty of concentrating the mind on any one subject, especially on details. Forced thinking in one channel, as in adding a column of figures, gradually weakened the memory so that all track of count was soon lost. All exercise, whether physical or mental, was followed by mental and nervous prostration and physical exhaustion. There was insomnia, mental depression, palpitation of the heart and a suffocating sensation in the chest and throat. Practically nothing was found on physical examination. The patient was fairly nourished and developed; his color was slightly yellow; the general sensation was good; the reflexes normal; the chest negative. There was no apparent enlargement of the spleen, but slight enlargement of the liver and tenderness on deep pressure over the gall bladder. The temperature, pulse and respiration were normal. The red blood-cells numbered 4,020,000, the leukocytes, 6,280; the hemoglobin was 92 per cent. (Fleischl). The differential count showed eosin 0.8 per cent., mononuclears, 2.3 per cent., polynuclears, 75.5 per cent. and irregular cells, 2 per cent. Malarial parasites were not found in fresh or stained specimens. The urine was normal and remained so throughout the five months that he was under observation. The patient did not have diarrhea; but following the hospital custom in cases returned from the tropics, he was given a saline and the stool examined microscopically, but nothing abnormal was found.

After seven weeks in the hospital he had a slight chill one night, which he said was followed by fever and sweat. His blood was carefully examined, but no malarial parasites were found. Following this attack and continuing until the true cause of his trouble was found and removed, he complained constantly of photophobia, which at times was very marked. Seven days after the first chill he had another one at night, which was also followed by fever and sweat as well as by a slight jaundice. Again malarial parasites were carefully sought for but not found. Following this chill the mental and nervous phenomena became more marked and the patient sang, laughed and talked almost constantly for about twenty-four hours. Five days later, there was another chill and the temperature reached 104 F., with more marked jaundice and gastro-intestinal symptoms, including vomiting, slight diarrhea and abdominal pain. The abdominal pain was most marked in the region of the gall-bladder and the patient had not been free from it since the first chill. Malarial parasites were again sought for but not found, either in fresh or in stained specimens. Two days afterward there was another chill similar to the last one, and on this occasion the examination of the blood showed a few—very few—parasites. At this time the patient was in a nervous and mental condition requiring a constant attendant.

Immediately after the finding of the parasites, the patient was put on 1 gram doses of quinin every four hours until marked cinchonism was produced, after which he was kept on 3 grams of quinin daily for fifteen days, when all medication was stopped. Two weeks afterward there was another slight chill and a few parasites were again found. He was then put on a systematic quinin treatment extending over a period of five months, as follows: 3 grams in three doses daily for fifteen days; then 3 grams in three doses on alternate days for one month; then once a week for another month, and finally once every two weeks for at least two more months.

In addition to this treatment, the patient had thermal baths, and iron, arsenic and strychnin. A clearing up of the symptoms was noticed shortly after the quinin treatment was instituted and progressed rapidly. This case is reported somewhat in detail because it is believed to be rare, and because of the injury that was done the patient by a faulty diagnosis which came so near causing him to be incarcerated in an asylum.

Journal of the Delaware Medical Society, Wilmington

March

152 Is Plasmodium Malariæ Conveyed to the Human System Through Any Other Avenue than the Mosquito? J. H. Wilson, Dover.

American Journal of Diseases of Children, Chicago

April

153 Influenzal Meningitis, with Especial Reference to Its Pathology and Bacteriology. D. J. Davis, Chicago.
154 Treatment of Chronic Infantile Paralysis. M. Strunsky, New York.
155 *A Study of Blood-Pressure in Normal Children. M. Michael, Chicago.
156 *Spontaneous Hemorrhage in the New-Born Infant. O. M. Schloss, New York, and L. J. J. Commiskey, Brooklyn, N. Y.
157 *Inflammatory Changes in the Appendix During Early Infancy. G. M. Smith, St. Louis.

155. Abstracted in The Journal, Feb. 25, 1911, p. 617.

156. **Spontaneous Hemorrhage.**—A review of the literature, and a study of nine cases of spontaneous hemorrhage in new-born infants, serve as the basis of this communication. Schloss and Commiskey have treated seven new-born patients with hemorrhage by subcutaneous injections of human blood. The first patient was treated in April, 1908, with, first, an injection of 20 c.c. of human blood serum, and later, an injection of whole blood. The whole blood was used instead of the serum for the reason that it was easier to obtain and could be used immediately, the time required for the serum to separate being saved. It seemed an additional advantage to inject, not only the serum, but also the formed elements which have influence on the coagulation of the blood. In most cases the blood was taken from one of the parents. The required amount was withdrawn from a vein of the forearm by means of an exploratory syringe and injected immediately into the subcutaneous tissue of the infant's back. Of the seven infants thus treated, six recovered and one died. The fatal case was in an infant who had suffered from multiple hemorrhages for eight days and died three and one-half hours after admission to the hospital. The patient was in a moribund condition when admitted and received only a single injection of 10 c.c. of blood. In five of the six cases in which recovery took place, the hemorrhage ceased soon after treatment, and at the same time there was marked improvement in the general condition. In four cases, the hemorrhage was rather severe and the patients presented all the signs of severe anemia due to loss of blood. One case was of moderate severity. In the remaining case a positive Wassermann reaction was obtained; the hemorrhage was only slightly improved after the blood injections, but ceased after the use of mercurial treatment. Whether the blood injections were of value in this case was difficult to determine. The authors believe that the best results can be expected from the use of human blood or serum. In the four successful cases the curative effect of blood transfusion was immediate, but, they say, this method of treatment must have a rather restricted field. The technical difficulties of transfusion in a young infant are formidable and render the method available only in the hands of a very skilful surgeon.

157. **Changes in the Appendix During Infancy.**—Among 200 appendices examined by Smith, fifteen showed inflammatory changes of varying intensity. The two youngest infants were 13 days and 17 days old, respectively. In nine instances, the age ranged between 20 and 30 days. Four infants were between 1 month and 2 months old. In two instances, the cecum was still in an incompletely descended position, lying between the iliac crest and the liver; but in the remainder of the cases the cecum occupied its usual position in the iliac fossa. Three times the distal part of the appendix was found hanging over the pelvic brim, and in such instances the distal part gave the evidence of severe inflammation. In eight cases, the appendix occupied a position directly behind the cecum and proximal part of the ascending colon. It is in this position of the appendix that in infants sharp angulation frequently occurs. The cause apparently is found in the relatively small retrocolic compartment at the time of birth, to which a relatively large appendix accommodates itself. Thus, the appendix passing upward directly behind the cecum and colon, may be bent sharply downward by the upper limit of the retrocolic space formed by the reflection of the peritoneum from the ascending colon to the iliac fossa or posterior parietes. Under normal conditions, even, fusion of the appendix with the cecum, ascending colon, posterior parietal peritoneum or iliac fossa is frequently found. There may result from these conditions not only a permanent fixation of the sharply bent appendix, but also changes in the form of the mesentery of the appendix, possibly causing circulatory disturbances.

In the majority of the cases reported by Smith, inflammation occurred when the appendix was found sharply bent on itself, lying in close relation with the cecum and colon; and in several instances the inflammation was more marked at the site of angulation than in other parts of the appendix. In three cases, the proximal part of the appendix passed upward, inward and to the left, so that the distal part lay curled behind the mesentery of the terminal coil of the ileum. The last described position of the appendix is that most frequently found in infants, as it formed 50 per cent. of all cases in 1,050 autopsies in infants studied by Smith. It is of interest to note that although the majority of inflammatory changes were found in appendices lying erect directly behind the cecum and colon, this variation in position of the appendix in the infant was found in only about 25 per cent. of all infants. Peritoneal exudate was present in seven cases. Thrombosis of the arteries occurred in the appendix and in the mesentery of the appendix in several instances.

Atlanta Journal-Record of Medicine

March

158 Local Anesthesia. W. L. Cooke, Columbus, Ga.
159 Vaccine Therapy in So-Called Surgical Tuberculosis. L. M. Gaines, Atlanta, Ga.
160 What Are the Indications at Present for Transfusion of Blood? E. G. Jones and D. F. Winn, Atlanta, Ga.
161 Salvarsan. E. G. Ballenger, Atlanta, Ga.

Detroit Medical Journal

March

162 Modern Ideas or Conceptions of Kidney Pathology. A. O. Hart, Maple Rapids, Mich.
163 Treatment of Gonorrhea. N. E. Aronstam, Detroit.
164 Relation of the Physician to the Problem of Nurses for People of Limited Means. C. A. Aikens, Detroit.
165 Prof. Herman Schwartze. E. Amberg, Detroit.

Journal of the Medical Society of New Jersey, Orange

April

166 Salvarsan. H. J. F. Wallhauser, Newark.
167 Tonsillar Hypertrophy: Anatomy, Surgical Treatment and Operative Dangers. R. B. Scarlett, Trenton, N. J.
168 *Can the Future Sex of the Family be Controlled at Will by the Parents? W. W. Kain, Camden, N. J.
169 *Medical Expert Testimony. G. A. Rogers, Newark.
170 What Can We Do for the Betterment of Our Society? W. J. Burd, Belvidere.
171 Salvarsan in Syphilis. N. J. Ramos, Newark.
172 Medical Inspection of Schools. W. J. Lamson, Summit.

168. **Can the Future Sex of the Family Be Controlled?**—Kain agrees with E. R. Dawson that the supplying ovary is in reality the essential factor in the causation of sex. Dawson held that the sex of the fetus is not due to the male parent, but depends on which ovary supplied the ovum which was fertilized, and so became that fetus. He found that a male fetus is due to the fertilization of an ovum that came from the right ovary, and a female fetus is due to the fertilization of an ovum that came from the left ovary.

169. **Medical Expert Testimony.**—Rogers suggests as a remedy for present evils that one or more experts should be jointly selected by the two opposing parties, and that these experts should be paid by both sides. In case the two sides should be unable to agree in their choice, the judge might deliver a casting vote; or each side might choose an expert, and a third might be selected by the two experts originally chosen, or by the court—these three physicians to make a joint report. He suggests further that the medical testimony in any given trial might be reviewed by a special committee appointed for that purpose by the medical council of the local medical society. By this means, a physicians who was found guilty of habitual perversion might be expelled from the society and thus discredited in the eyes of the court

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

March 25

1 Ankylostoma Infection. A. E. Boycott.
2 *Traumatic Myositis Ossificans. R. J. Godlee.
3 *Idem. G. H. Makins.
4 Formation of Bone in Periosteum Separated by Injury. A. A. Bowlby.
5 A Case of Poisoning by Tragopogon Pratense, or Goat's Beard. F. J. Smith.
6 A Record of Ninety Diphtheria Carriers. A. G. MacDonald.
7 Grave and Prolonged Cardiac Failure Following the Use of Cocain in Dental Surgery. F. W. Price and A. B. Leakey.
8 *Two Uncommon Forms of Deformity of the Female Generative Organs. J. A. C. MacEwen.
9 Nuchal Lipomata in the Lower Animals. Sir J. Hutchinson.
10 Clinical Aspects of Some Varieties of Excitement. W. T. Munro.

2. Traumatic Myositis Ossificans.—One case of this kind is reported by Godlee. A young man had been kicked on the front of the thigh at football.. When Godlee saw him there was a very large oval swelling on the front of the lower half of the thigh. It was symmetrical and very hard, except just above the patella, where it fluctuated, and there was only slight pain on movement. There was pain and stiffness for several months. After three months the mass was slightly smaller. It was obviously fixed to the bone. After another month the lump had almost gone, but a skiagram showed that there was then a distinct flake of bone on the front of the femur, fading off above into the surface of the shaft, but ending below in a sharp spicule. Godlee points out that a very large swelling without treatment may diminish so much in size as almost to disappear and cause no further trouble or inconvenience. He raises the question whether this condition should be called myositis, and what is the evidence that it is due to inflammation of muscle. He thinks it more probable that the essential things are, first, an injury to the periosteum, and, second, an effusion of blood; and that the injury to muscle and the inclusion of muscular fibers in the callus are, so to speak, accidental, though they no doubt govern the shape and position of the new mass of bone. In other words, the injury is more analogous to what occurs when periosteum is stripped off in such operations as excision of the elbow, or in the cephalhematomata of infants, in which it is easy to demonstrate true bone at the margins of the clot, or to the formation of provisional callus in simple fractures.

3. Traumatic Myositis Ossificans.—Two cases are reported by Makins. The patients were of the same age, came under observation at the same time, and while one was treated by an active method, the other practically recovered spontaneously. Makins maintains that no active treatment should be adopted in the early stages of the condition. The frequency with which two muscles of the body, the quadriceps extensor femoris and the brachialis anticus, are affected seems to Makins to support the theory that the exciting influence is to be referred to bone-forming cells detached from the periosteum. Makins says that in the general line of treatment to be adopted a period of some weeks' complete rest should be maintained during the continuance of the active progress of ossification. When it is judged by clinical observation and Roentgen-ray examination that progress has ceased or that the process is retrogressive, massage and exercise should follow. Operative treatment should only be considered when the process has manifestly come to a definite standstill, and the patient suffers from functional disability which there is a chance of relieving.

8. Deformity of Female Generative Organs.—In the first case cited by MacEwen, a woman, aged 46 years, was suffering from symptoms pointing to intestinal obstruction. The abdomen was distended and tender to palpation, particularly over the left iliac fossa, where a large mass was easily detected on palpation, and it was dull to percussion. On vaginal examination, the cervix was found to be normal in position and direction, but small and ill-developed. The uterine sound could not be introduced into the canal, but an ordinary probe went in for about an inch. The fundus could not be detected. The vaginal roof on the left side was occupied by a mass which was tender to palpation, while on the right side a hard rounded mass was detected which projected toward the rectum, and was easily felt in rectal examination. This mass was about the size of a golf ball and was fixed. The peritoneal cavity was opened and a quantity of sanguineous fluid was evacuated. A large tumor, subsequently ascertained to be fibromyomatous, at once presented. This tumor was freely movable, being attached to a pedicle, which had become twisted and was partially gangrenous. The pedicle was ligated down close to what was supposed to be the serous surface of the uterus and the tumor removed. The left Fallopian tube was also in a gangrenous condition and was also removed. The left ovary appeared normal but of small size. On passing the finger down along a course of the rectum a mass was now detected. There was no uterine body present. On the left side there was an ill-developed broad ligament, with the gangrenous tube already mentioned, and fairly normal ovary. On the right side, the appendages seemed to be entirely wanting, while a little to the right of the normal position of the uterus the hard mass referred to presented. It emitted a slightly hollow note when tapped. It consisted of a roughly spherical shell of osseous matter, which contained an oily material at first sight resembling pus. No hairs, teeth or other tissue elements were present. The patient made an uninterrupted recovery save for slight transient jaundice for a few days after operation.

MacEwen expresses the belief that the intestinal obstruction in this case was probably due to the pressure of the fibromyoma on the bowel, but no evidence was obtained of any portion being damaged thereby. This woman had menstruated regularly. In the second case there was an absence of the lower end of the vagina.

Bristol Medico-Chirurgical Journal, London

March

11 Cerebrospinal Syphilis. J. M. Clarke.
12 Defects in the Visual Field. F. R. Cross.
13 Nature and Treatment of Chorea C. F. Coombs.

Clinical Journal, London

March 15

14 A Case of Spasmodic Torticollis and a Case of Cerebellar Tumor. P. Stewart.
15 Facial Tetanus. W. F. Fedden.

March 22

16 The Weak Heart. W. J. Fenton.
17 *Acute Pneumonia in Children. J. P. Parkinson.

17. Acute Pneumonia in Children.—With regard to the general treatment of the disease, Parkinson says that the child should be put to bed, and frequently moved from side to side to allow collapsed areas of lung to expand, for the same reason as a fit of crying is useful now and then. The room should be well ventilated so that oxygen is given in a natural way, though oxygen from a cylinder may be useful in cardiac failure with cyanosis. Bronchitis has to be treated on the ordinary lines, and if there be much secretion an emetic may give relief. Ipecacuanha often fails to produce vomiting, and the author considers a small dose of apomorphin safe and efficacious. Ipecacuanha is much too frequently prescribed, he asserts, for it is useless when there is no bronchitis, and when there is, it is by no means sure that this drug acts favorably. It is also certain, Parkinson says, that it upsets the digestion; it is better, therefore, if the child seems to be getting rid of the bronchial secretion without drugs not to give them unless there is definite indication for their employment. The author has often found a hot mustard bath useful in cases of collapse in young infants; it relieves congestion of the lungs and heart by dilating the peripheral arterioles as well as helping the action of the skin. He insists on disinfection of the mouth and teeth to prevent further infection of the lungs. Alcohol, he says, is not necessary as a routine treatment, but may be very useful, especially in long-continued bronchopneumonias, and in cardiac failure. Brandy, well-matured, has an action far superior to that possessed by the cheaper varieties. The feeding in acute pneumonia is of the greatest importance, and so long as a child takes its food all goes well; one of the earliest signs that cause anxiety is failure of the appetite. An important rule is, more water and less food than in health. It has been found from examination of the digestive ferments in children suffering from acute disease that the peptonizing power of the stomach and pancreas is very weak. Emulsifying powers are real or absent. The greatest activity is in the diastatic power of the pancreas. The practical inference of this is that the food should consist chiefly of carbohydrates, such as starches and sugars; fats should be given in very small amounts and proteids may be predigested. If curds are passed in the stools the milk should be diluted or peptonized.

Indian Medical Gazette, Calcutta

March

18 Cirrhosis of the Liver. J. T. Calvert.
19 Exploratory Laparotomy in Diseases of the Gall-Bladder and Bile-Ducts. F. A. Barker.
20 Ulcerated and Swollen Gums in the Native Army. P. Hehir.
21 An Aid to Diagnosis of Poisonous Snakes. V. B. Green-Armytage.
22 Modern Midwifery Practice in India. G. T. Birdwood.
23 Wounds Inflicted by Tigers, Panthers and Bears. F. H. Gleeson.
24 Native Gunpowder Injuries of the Eye. R. H. Elliot.

Medical Press and Circular, London

March 22

25 Diseases of the Breast. J. R. Morison.
26 Treatment of Lupus Vulgaris with Zinc Ions. S. Taylor and R. W. MacKenna.
27 Colitis. L. A. Bidwell.
28 Bacteriologic Aspects of Colitis. J. C. Matthews.

Archives des Maladies du Cœur, etc., Paris

March, IV, No. 3, pp. 145-208

29 Present Status of Electrocardiography. E. Bordet.
30 Relations Between Pseudoleukemic Anemia and Leukemia. L. Tixier.

Obstétrique, Paris

March, IV N. S., No. 3, pp. 249-344

31 *Uterine Pregnancy After Extra-Uterine Pregnancy. (Des grossesses utérines survenant après une grossesse extra-utérine.) E. Essen-Möller.
32 *Ocular Disturbances in Pregnant Women. (Des troubles oculaires chez la femme enceinte dans leurs rapports avec l'azotémie et la chlorurémie gravidiques.) A. Weil and A. Wilhelm.
33 Structure and Development of Uterine Mucosa. E. Retterer and A. Lelièvre. Commenced in No. 2.

31. **Uterine Pregnancies After Extra-Uterine.**—Essen-Möller remarks that very little attention has been paid to pregnancies occurring in the uterus after an extra-uterine pregnancy, while a number of articles have been published on simultaneous uterine and extra-uterine pregnancies. Nilsson was able to compile sixty-eight cases of this kind in a memoir not long ago, and a number have been reported since. In Essen-Möller's experience with fifty-six patients with extra-uterine pregnancy, 46 per cent. of the thirty-nine women followed to date became pregnant again later; the sound tube performed its functions apparently normally in twenty-eight pregnancies, two of the women passing through three pregnancies afterward. Seventeen of the thirty-nine women thus bore healthy children, and this experience confirms the necessity for leaving the sound tube unmolested in operating for extra-uterine pregnancy. Engström has reported uterine pregnancies in six cases after removal of the pregnant tube and liberation of the other tube from adhesions; Prochownik has reported the same in four cases, and Essen-Möller reports a pregnancy after the release of the sound tube from adhesions, although in his case the succeeding pregnancy was likewise tubal. The main point in respect to pregnancy later seems to be the refraining from drainage. The tabulated details of his fifty-six cases show only two cases in which a pregnancy followed when there had been resort to drainage, and in these two cases the succeeding pregnancy was likewise extra-uterine or there was an interval of four years before the following conception, showing that the tube required a long time to regain its normal functional capacity. In Engström's series likewise drainage had not been attempted in nineteen of the twenty cases in which the extra-uterine pregnancy was followed by normal pregnancy later.

32. **Visual Disturbances in Pregnant Women.**—Weil and Wilhelm compare the visual disturbances liable with retention of chlorids, the dropsical form, and with retention of urea, the dry form. In the first type the visual disturbances are an amaurosis of sudden onset, which promptly subsides when elimination of the chlorids is once more under way; the ophthalmoscope shows nothing or merely a venous congestion around the papilla which disappears without leaving a trace. On the other hand, the distinguishing feature of the eye disturbances with retention of urea is the so-called albuminuric retinitis, the gravity of which is explained by the coincident uremia or azotemia. Even with severe symptoms of this kind, emptying the uterus generally causes their complete retrogression. In a typical case reported the patient was at the seventh month of her first pregnancy. She had had primary chronic nephritis as a child, and during the pregnancy the clinical picture of severe azotemia gradually developed, with apathy, anorexia, pruritus, albuminuric retinitis and convulsions, with almost total amaurosis, while the cerebrospinal fluid contained 2.67 gm. of urea. Delivery was induced and the copious diuresis which followed seemed to wash out the retained nitrogenous bodies and the patient rapidly recovered. Sudden transient amaurosis was observed in two other cases reported, evidently due to chloridemia and subsiding at once after spontaneous delivery. One of these patients had had eighteen, the other three eclamptic convulsions. Venesection was done in both cases. There were no convulsions after delivery.

Presse Médicale, Paris

March 11, XIX, No. 20, pp. 185-200

34 Inaugural Lecture on Internal Pathology. (Les orientations de la médecine.) F. Widal.
35 Albumin Reaction in Sputum. Lecaplain.
36 Support for Visceral Ptosis. (Pneu-sangle anti-ptosique.) Charnaux.

March 15, No. 21, pp. 201-208

37 Vaccine Therapy. A. Mauté.

Revue de Chirurgie, Paris

March, XXXI, No. 3, pp. 281-400

38 *Papilloma of Larynx in Children. A. Broca and E. Roland.
39 Experimental Ligation of Inferior Vena Cava. J. Béjan and M. Cohn.
40 Mixed Tumors of the Thyroid. G. Chavannaz and P. Nadal.
41 *Perforation of Bile Ducts. (Traitement des perforations biliaires en plein péritoine au cours de la lithiase.) G. Cotte and L. Arnaud.

38. **Laryngeal Papillomas in Children.**—Broca and Roland expatiate on the fact that there is no good method of treatment for these laryngeal growths, ensuring against recurrence and leaving the voice normal; the only choice is to determine the least bad technic. If there is dyspnea and much wheezing, tracheotomy may be required; it is well to wait for a time after this as the tracheotomy may eventually lead to the shriveling of the growths. They come and go in the arbitrary and mysterious manner of warts on the skin. Removal of the growths through the mouth, under direct visual inspection, is of course the preferable method and can generally be done after the age of 4 or even a little earlier. But it usually requires more than one operation; the operations must be repeated during months or even years. Tracheotomy may finally become necessary, even then, if the growths sprout again and there is much obstruction of breathing. Exceptionally, thyrotomy or better, perhaps, thyrostomy, may be found preferable. Even after tedious treatment by these various technics, stricture of the larynx may compel laryngostomy. There is always the hope that the papillomas may shrivel spontaneously, however, as the child outgrows the tendency. They sprout as if growing from seed sown by the primary growth, and behave in the larynx much the same as in the bladder. Luys has recently reported a case in which a large papilloma was removed from the bladder, with no sign of recurrence, but a new crop of minute growths of the same kind developed around, requiring multiple cauterization. In addition to the danger of suffocation from the growth of the laryngeal papillomas, there is danger of a suddenly fatal inhibiting reflex. Frenkel has cited such a case in which a child of 6, with no history of dyspnea, suddenly suffocated on rising in the night. The prognosis of papillomas in the larynx is more serious in children than in adults as the lumen is smaller and as children are more liable to warty growths. Spontaneous expulsion and cure was observed by Bruns in three of the forty-eight cases he has compiled; over half the children died before the age of 3 and only five reached the age of 10 without operation. The spontaneous subsidence of the papillomas may explain these cures in some of the cases, and the possibility of this justifies expectant treatment for a reasonable time after tracheotomy. Warts on children's hands sometimes subside after the children have taken a little magnesia, and this treatment has been suggested for children with papillomas in the larynx, hoping thus to favor spon-

taneous retrogression or to aid the retrogression which may follow opening the trachea.

41. **Perforation of Bile Ducts in Lithiasis.**—Cotte and Arnaud give the details of seventy-six cases on record of perforation of the gall-bladder or a biliary passage into the peritoneum. The bile escaping into the peritoneum is almost inevitably septic in case of lithiasis. The main point in treatment, they say, is to drain the gall-bladder outward without delay, not attempting its removal until later if the patient seems unable to bear cholecystectomy at once. This operation is less difficult in these cases than under other conditions as the perforation occurs when the gall-bladder is distended and without adhesions to adjacent organs. If the operation follows soon after the perforation and the peritoneum is not seriously involved, he prefers to wipe it dry and strives to prevent absorption by pouring camphorated oil into the abdominal cavity, and keeping the patients in the Fowler position, that is, raising the head of the bed 18 or 20 inches. There were thirty-four recoveries and forty-two deaths among the seventy-six cases summarized from the literature, including a previously unreported case in a woman of 62. The gall-bladder was merely drained and the liver tamponed off but the temperature did not drop quite to normal, and six weeks later chills, vomiting and fever led to discovery of an abscess near the foramen of Winslow. Prompt and complete recovery followed cholecystectomy.

Semaine Médicale, Paris

March 15, XXXI, No. 11, pp. 121-132

42 *Exercise of the Ear in Treatment of Deafness. (De la gymnastique auriculaire et de son application au traitement de la surdité.) C. Fernet.

March 22, No. 12, pp. 133-144

43 *Diagnosis of Suppurating Echinococcus Disease of the Liver. (Difficultiés et ressources du diagnostic dans certains kystes hydatiques suppurés du foie.) F. Lejars.

42. **Exercise of the Ear in Treatment of Deafness.**—Fernet is not an otologist but he has experimented in his own person and has trained others to exercise the ear as a means of warding off encroaching deafness and utilizing all the auditory capacity left. Instead of using the "best" ear, he turns the defective ear whenever possible and strains to listen with this ear, listening for the ticking of a clock, etc., thus training the ear to listen better. In addition to this exercise in listening he strives to influence the ear muscles so as to favor the hearing by enlarging the meatus and promoting the circulation in the parts. For this he works the scalp around the ear forward and backward, then the outer ear in this way with the regional scalp, and then forward and back and up and down and then in a circle. The sensation of movement is felt down to the depths of the meatus. The exercises should be done gently, with frequent pauses. The best time is in the morning, before arising, for ten or fifteen minutes. Another set of exercises is to listen to a clock's ticking and then gradually draw farther and farther away from the source of the sound until it becomes inaudible, but gradually it is heard again if the ear listens very intensely. The reflex action of the listening act may influence the muscles of the ear to enhance the perception of sounds. By systematic training in this way it is possible to hear the ticking or other sounds at distances previously supposed impossible. The sensibility of the nerves and the better nourishment of the parts all contribute to the benefit derived. The entire organ of hearing functionates better when all its parts are in good vital condition, while any organ doing active work grows stronger and better all the time. In his own person the Eustachian tube leading to the partly deaf ear became permeable after these exercises, thus permitting normal ventilation of the middle ear.

43. **Suppurating Echinococcus Disease of the Liver.**—Lejars comments on the relative frequency of suppurative hydatid cysts in the liver and the available means for diagnosis. The complement-fixation test is extremely valuable in case of positive findings, but it is baffling to obtain a negative response when the operation reveals a large hydatid cyst, as in a recent case in his experience. The cyst was filled with fluid but without daughter cysts. In another case there had been liver colics for three years and a suppurating gall-stone process was surmised, as nothing pathologic could be palpated in the liver. A small subcapsular pus pocket was found and evacuated but the temperature ran up two weeks later and the fixation reaction was distinctly positive. There were chills and jaundice but deep punctures of the liver were negative. Finally he opened the lips of the wound and found in the very center of the liver a large hydatid cyst, distending the liver evenly on all sides, and prompt recovery followed its removal. The suppurating septic angiocholitis first found was evidently secondary to the deep cyst, which was also infective and suppurative. Lejars gives the details of a number of other cases in which the diagnosis was difficult. Fever and local and radiating pains are the most instructive features.

Archiv für Gynaekologie, Berlin

XCIII, No. 2, pp. 189-412. Last indexed April 1, p. 1010

44 Droplets of Fat in the Placenta. J. Bondi.
45 Epinephrin Treatment of Osteomalacia. (Zur Adrenalinbehandlung [illegible] J. Novak.
46 Interrelations [illegible] lerosis and Menstruation, Pregnancy a [illegible] (Die multiple Sklerose und das Geschlechtsleben der Frau in ihren Wechselbeziehungen.) H. Offergeld.
47 Bacteriology of the Lochia. (Die geeignetsten Methoden zur Untersuchung des Lochialsecretes auf aerobe und anaerobe Streptokokken, ihre Resultate und klinische Bewerthung.) F. Goldschmidt.
48 *Tuberculosis of the Ovaries and Fallopian Tubes. (Beitrag zur Tuberculose der weiblichen Adnexe.) Loiacono.
49 Puerperal Inversion of the Uterus with Chronic Nephritis. Loiacono.
50 The Formation of the Corpus Luteum. (Corpus luteum-Bildung beim Menschen.) R. Meyer.
51 "Pregnancy Liver." (Zur Klärung des Begriffs "Schwangerschaftsleber.") J. Hofbauer.

48. **Tuberculosis of the Ovaries and Tubes.**—Loiacono discusses the findings in twelve cases of tuberculosis of the adnexa in which operative treatment was applied. The first signs of the tuberculous process were noted between the ages of 20 and 37 in all but two cases in which the women were 46 and 47 respectively. There was a primary process in the lungs or bronchial glands in these as in almost all the other cases on record. Eight of the patients were sterile, another had had an abortion, one had borne one and another two children. The symptoms of the tuberculous process in the adnexa were merely disturbances in menstruation, leukorrhea and pains of varying intensity in the region of the adnexa, but there were no sweats, fever or anorexia and tubercle bacilli could not be cultivated from the uterine secretions. The left tube was the seat of the process in all twelve, the right being also affected in nine; the entire adnexa on both sides were involved in only three cases. Three of the patients died soon after the operation; the pulmonary processes were far advanced in these women. The other patients were in comparatively good health at the time of the removal of the diseased tubes, and they regained apparently complete health after the removal of the focus. Histologic study of the adnexa removed and the course of the cases confirm the fact that it is not generally necessary to remove the ovaries in such cases; the tubes are the organs involved, and they display a marked predisposition to tuberculous infection. Their removal is further justified by the necessity for preventing conception later in such women. Even when the ovaries seem slightly involved in the process, it is liable to retrogress to complete restitution after removal of the focus. He adds in conclusion that it may prove an advantage to flush out the abdominal cavity with a weak formalin solution, as is done after an operation for tuberculous peritonitis, in order to rinse out any bacilli that may have been scattered by the operation.

Berliner klinische Wochenschrift, Berlin

March 13, XLVIII, No. 11, pp. 461-508

52 *Affinity of Salvarsan for Nerve Tissue. (Zur Frage der Neurotropie des Salvarsans.) A. Géronne and C. Gutmann.
53 Salvarsan in Leprosy. H. Isaac.
54 *Spontaneous Fractures in Tuberculous Coxitis. O. Ehringhaus.
55 *Modification of Holmgren's Method for Forcing Out Instead of Aspirating Pleural Effusions. E. Aron.

52. **Disturbances in Nervous System After Injection of Salvarsan.**—Géronne and Gutmann give the details of thirteen cases of this kind. The list includes a case with symptoms of irritation of the cerebral and spinal meninges, a month after injection of salvarsan three weeks after infection. Under a second injection of salvarsan all the symptoms subsided. In a

second case there were evidences of basal meningitis and double facial paralysis, coming on eight weeks after injection of salvarsan and disappearing after a second injection. The facial paralysis and psychic disturbances returned four months later but subsided permanently under injection of calomel. In the other cases there were respectively a basal meningitis with double facial paralysis and disturbance in the auditory nerves; double otitis interna with right optic neuritis and hemianopsia; facial paralysis; oculomotor paralysis; optic neuritis with signs of irritation of the meninges and left otitis interna; alternating double otitis interna; double otitis interna; otitis interna with predominant disturbance in the vestibular nerve, and otitis interna with the Menière symptom-complex. These nervous disturbances came on six or eight weeks after injection of salvarsan. The patients were all in the early stage of secondary syphilis except one with a tertiary gumma on the tongue. There were no syphilitic manifestations in any case on the skin or mucosa, but in one case these developed several weeks afterward. Géronne and Gutmann regard these manifestations as an inflammatory infiltration of nerves or meninges resulting from the action of the spirochetes or their toxins and readily influenced by treatment so that complete restitution is the rule. The manifestations have nothing in common, they assert, with symptoms of arsenic intoxication, and nothing of the kind, they say, has ever been observed in patients given salvarsan for diseases other than syphilis, malaria, chlorosis, relapsing fever, etc. They have also encountered in the last six months four syphilitics with disturbances in the auditory nerve who had been treated with mercury alone and had never taken salvarsan; two were in a late stage of syphilis and two had been infected five and six months before. One of the latter patients presented a typical otitis interna exactly as observed in his six patients who had been injected with salvarsan. In this latter group the patients had complained of headache before the drug had been given or their nervous system had been impaired by drink or age and most of them were women. At the same time the frequency of these nervous disturbances and their association with the salvarsan treatment suggest, Géronne and Gutmann remark, that the salvarsan must possess a certain affinity for these nerves. This neurotropic action is not enough to induce a degenerative inflammation in this or that predisposed nerve domain, but yet it is enough to induce some slight change in the nervous system, probably not appreciable even with the microscope, but yet enough to decide the localization of the syphilis. In short, these neuro-recurrences, they say, may be classed as traumatic syphilis. They recommend in conclusion treatment based on this assumption, that is, energetic mercurial treatment, bearing in mind that syphilitic manifestations in the nervous system have a better prognosis the earlier treatment is applied.

54. **Spontaneous Fracture with Tuberculous Hip-Joint Disease.**—Ehringhaus states that in no less than six cases of tuberculous hip-joint disease in his charge the bones in the entire leg became fragile from the trophic disturbance resulting from the tuberculous process. In each case there was spontaneous fracture and it occurred always at the same point where the spongiosa joined the more compact part of the bone, at the lower end of the shaft of the femur, just above the condyle. It is extremely important to keep watch of the bones below with tuberculous coxitis and to examine this special point repeatedly with radioscopy to detect any tendency to fracture and apply appropriate measures to prevent it.

55. **Improved Technic for Forcing Out Pleural Effusion.**—Aron commends Holmgren's technic, describea in these columns Jan. 28, 1911, page 312, but he thinks that the same results can be obtained without the necessity for two puncture holes. using merely a two-way trocar. One mouthpiece can be connected with the bulb to pump air into the pleural cavity while the other mouthpiece is connected with the receptacle into which the effusion is blown out by the air forced into the pleural cavity.

Deutsche medizinische Wochenschrift, Berlin

March 16, XXXVII, No. 11, pp. 481-528

56 *Anaphylaxis. (Die Anaphylaxie mit bes. Berücksichtigung ihrer Bedeutung für Infektion und Immunität." E. Friedberger
57 Auto-Infection of Parturients. (Zur Frage der Selbstinfektion.) L. Aschoff.
58 Biologic Action of Radium Emanations. J. Plesch.
59 Technic for Intravenous Injection of Salvarsan. W. Wechselmann.
60 *Cause for Toxic Action of Acid Solutions of Salvarsan. (Ursache für die giftige Wirkung saurer Salvarsanlösungen.) Meissner.
61 *Vaccination Against Small-Pox. (Zur Frage des Impfschutzes.) E. Levy.
62 Quartan Malaria in Germany. A. Hatzfeld.
63 Broad Button Probe for Diagnosing Strictures in Esophagus and Rectum. (Neue Methode der diagnostischen Sondierung der Mastdarm- und Speiseröhrenverengerungen.) R. Callmann.
64 Congenital Angioma of Parotid Gland. P. Harrass and W. Suchier.
65 Ephemeral Traumatic Glycosuria in New-Born Infants. E. Hoeniger.

56. **Anaphylaxis.**—Friedberger recapitulates the arguments which have convinced him that immunity and anaphylaxis are merely quantitative variations of a single phenomenon. Both result from the presence of alien albumin in the organism, which has obtained access outside of the alimentary canal. With natural infection the albumin is produced by the bacteria only gradually; it is not incorporated all at once, like the amount causing anaphylaxis. He has been able to produce anaphylaxis or the symptoms of acute infection at will by administering large or small amounts of the foreign proteid. The temperature curve is particularly interesting under these various conditions, as he shows by detailed reports of his experiments.

60. **Precipitation in Acid Solutions of Salvarsan.**—Miessner is in charge of the veterinary institute at Bromberg and he applied arsenic treatment to ten cattle with foot-and-mouth disease; arsenophenylglycin was given to six and salvarsan to four, in an acid solution. The dose of the latter was only 3 gm., that is, 0.007 gm. per kilogram of weight, but all the animals showed severe symptoms at once—difficulty in breathing, foaming at the mouth—and they all died in from ten hours to two days. Ehrlich suggested that these fatalities might have been the result of a special susceptibility in foot-and-mouth disease, and another group of animals was treated with a smaller dose, 0.005 gm. per kilogram. Similar symptoms developed in these while cattle injected with an alkaline solution bore much larger doses, 0.4 gm. per kilogram, without any signs of disturbance. Microscopic examination confirmed the assumption that the intravenous injection of the acid solution had caused accumulation of the blood in the pulmonary artery into which the drug made its way after being injected into the jugular vein, the vessel becoming obstructed and arresting the arsenic which accumulated at this point. This assumption was confirmed *in vitro*, the acid solution entailing precipitation in defibrinated blood. The injurious action of the acid solution in man is due to the same cause, that is, thrombosis of the pulmonary artery and its sequels, as shown, he says, by the necropsy findings in a recent case in Hamburg in which death followed an injection of an acid solution of salvarsan. These data confirm the necessity for neutralizing the salvarsan. One gm. of salvarsan requires 4.4 c.c. of normal solution of soda to neutralize it; a heavy precipitate is thrown down which requires 6 c.c. more of the soda to dissolve it.

61. **Vaccination Against Small-Pox.**—Levy remarks that small-pox is now so rare in Germany that the present generation of physicians know scarcely anything about it and some may fail to realize the absolute importance of vaccination. He reports a case which is as convincing as a laboratory experiment in respect to the protective power of vaccination and the danger of transmission of the disease from the mildest forms. A German returning from a trip to Siberia had a slight eruption in the face but did not feel ill and paid no attention to it, but it was evidently variola. He had been vaccinated twice, the last time forty years before. His mother had never been vaccinated, and she came down with small-pox and died. Her daughter's family with three children came from a distance to the funeral; all had been vaccinated except the youngest, a boy of 2, and this child developed severe small-pox. The other members of the family contracted the small-pox from the child but in such a mild form that it was scarcely recognizable. The disease had not been recognized at

the time in any of the cases and no measures for disinfection had been applied.

Medizinische Klinik, Berlin

March 12, VII, No. 11, pp. 402-440

66 Office Tuberculin Treatment. (Notwendigkeit und Möglichkeit ambulanter Tuberkulinbehandlung durch den praktischen Arzt.) K. Blümel.
67 *Treatment of Thoracic Empyema. (Behandlung der Thoraxempyeme nach Bülau.) R. Frank.
68 First Aid to the Injured by the Laity: (Erste Wundbehandlung durch Samariterhände.) H. Haus.
69 *Salvarsan in Syphilis. O. Rissom.
70 Bronchial Stenosis. (Chronische Bronchialerkrankungen mit Ausschluss der Tuberkulose. VIII.) A. Posselt.
71 Gastro-Intestinal Hemorrhage with Purulent Cholecystitis. Feldhahn.
72 Tests and Limits of Visual Acuity. (Ueber Sephrüfungen und die Grenze der Sehschärfe.) W. Thorner.

March 19, No. 12, pp. 441-478

73 Importance of Phosphorus in Courses of Forced Feeding, Rest and Passive Exercise. (Ueber Mastkuren.) A. Bickel.
74 *Intestinal Stenosis. J. Schnitzler. Commenced in No. 11.
75 The Sinus Node. (Welche Bedeutung kommt dem Sinusknoten zu.) W. Koch.
76 *Salvarsan in Syphilis. F. Port.
77 Malt Extract. E. Seel.
78 Action of Thyroid Extract on Gastro-Intestinal Cancer. (Wirkung von Schilddrüsenextrakt auf Magendarmkrebse.) E. Diesing.
79 Bronchial Concrements. (Chronische Bronchialerkrankungen mit Auschluss der Tuberkulose. IX.) A. Posselt.
80 Intoxication from Inhaling Volatile Substances in Tubercle Bacilli Cultures. (Vergiftung mit den Riechstoffen der Tuberkelbazillen.) E. Leschke.

67. **Continuous Drainage of Empyema of the Chest.**—Frank reports his experiences with forty-three patients with empyema in the thorax in the last ten years. About 55 per cent. of the patients were cured; in none of these cases had the empyema been installed for more than six weeks. Three boys and two girls were under 10; four boys and one girl were under 20. In only two cases was tuberculosis certain; it was suspected in two others among the twenty-four cases of recovery. His experience confirms the advantages of permanent drainage according to Bülau's technic; with this a flat flask is suspended by a strap from the opposite shoulder. The empyema drains into the flask through a rubber tube and drain inserted at the lowest point of the empyema, held in place with straps of adhesive plaster. A clamp on the tube is opened every two or three hours to allow not more than 200 c.c. of pus to escape; it is important not to drain too much at one time. He commends this technic as excellent for acute and not too old empyema; it is the simplest and the least annoying of all, he states, and the final outcome is good. Thoracocentesis should be reserved for small encapsulated empyema while the thoracoplastic operations should be reserved for the cases in which the Bülau technic is impracticable or in which there are chronic pathologic changes in the pleura.

69. **Salvarsan in Syphilis.**—Rissom concludes from his experience in the army that salvarsan should not be recommended for the sole treatment of syphilis among soldiers, although in the malignant form and with recent primary lesions it is certainly efficient. If it is used in military hospitals he advises intravenous injection of from 0.4 to 0.5 gm. followed at once by a course of mercurial treatment. The local infiltration with subcutaneous injection interferes with the military service, so that this technic is not advisable.

74. **Acute Intestinal Stenosis.**—Schnitzler advocates prompt relief of peritonitic stenosis of the intestine by opening into the bowel. He has made a fistula of this kind in peritonitic ileus in almost one hundred cases and he has never had occasion to regret it. More than once he has regretted that he had not done it twenty-four hours sooner. Feculent vomiting should not be waited for; colic pains, lack of stool and flatus and the metallic tinkling sounds in the intestine to which Wilms recently called attention—these are signs enough of stenosis and there should be no further delay. He treats the patients in this category the same as for incarcerated hernia, except that he does not try to remove the obstruction but merely makes one or more openings into the distended loops. It is foolish, he declares, to waste time and to annoy the patients with medical measures in these cases; in fact, high enemas are rarely indicated and the most misused measure in modern medicine. Only with volvulus of the sigmoid flexure is the high irrigation superior to an ordinary enema. If a small enema does not bring stool within twenty-four or forty-eight hours he advocates enterostomy without delay. When it is done early, the fistula can be made by the Witzel technic. When the ileus was not due to a neoplasm or other permanent obstruction, stool was voided by the natural route within a few days in every case. He adds that appendicitis may from the start present merely the picture of purely mechanical ileus. In conclusion, he refers to the mesenteric occlusion from compression of the duodenum by the root of the mesentery—the postoperative ileus to which he called attention in 1895. He still maintains that the dilatation of the stomach in these cases is secondary to this compression, this assumption being sustained by the benefit from turning the patient on the abdomen. In all cases of postoperative ileus he urges the physician to refrain from exploring the abdomen, mere enterostomy generally proving sufficient for the time being.

76. **Salvarsan in Syphilis.**—Port insists on having his patients sign a paper which states that the new drug has not crowded out the tried and tested mercury, but is administered at the special desire of the patient and with the understanding that a course of mercurial treatment must follow and that the hospital is not to be held responsible for any injurious consequence of the salvarsan injection. He states that he was delighted to have the certificate in his hands in the numerous cases in which a deep necrotic process developed at the point of the subcutaneous injection. This occurred, he says, in a shockingly large proportion of his sixty cases until he changed to the intravenous technic. In one case there was evidently a small infarct in the lung responsible for pain in the left chest, area of dulness and bloody sputum the day after the injection. The danger of thrombosis and embolism is shown by this case not to be so negligible as many maintain. In any event, the patient should stay in bed for two or three days after the injection. One of his patients insisted on leaving the clinic twenty-four hours after the intravenous injection, but returned two days later with local thrombosis, the arm being swollen; the symptoms subsided under appropriate measures in a few days. On account of the danger of such disturbances the injection is made in the left arm. It is his impression that patients with recent infection react with higher temperature than others. Vomiting and diarrhea were common after intravenous injections, and one patient became very deaf but hearing gradually returned in the course of two weeks. One patient had total right deafness coming on five months after subcutaneous injection of the neutral emulsion, although there were no signs of recurrence of the syphilis. He thinks that these cases of neuro-recurrence are due to toxic injury of the nerves, not only by the endotoxin of the germs killed by the salvarsan but by the drug itself, and he thinks that patients should be warned against such eventualities. He declares, further, that the intravenous technic is *not* suited for general practice, and that it is *not* free from danger of thrombosis and embolism even in the hands of specialists.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 5, pp. 675-794. Last indexed April 1, p. 1011

81 *Tumors in Cerebellopontine Angle. (Die Kleinhirnbrücken- [illegible] H. Leischner.
82 *Ga[illegible] After Gastro-Enterostomy and Resection of the Pylorus. L. Schuller.
83 Reciprocal Relations Between Typhoid and Appendicitis. (Wechselbeziehungen [illegible] Abdominaltyphus und der akuten [illegible]
84 *Co[illegible] Spasm with Hour-Glass Stomach. (Ueber Erfolge und Aussichten einer konservativen Therapie des Sanduhrmagens, nebst Beiträgen zur röntgenologischen Diagnostik desselben.) E. Schlesinger and J. Nathanblut.

81. **Tumors in Cerebellopontine Angle.**—Leischner analyzes ten cases of this kind in which operative treatment was applied in the surgical clinic at Vienna in charge of von Eiselsberg. The patients were between the ages of 30 and 50, and the symptoms pointed unerringly to a process obstructing the cerebellopontine angle. In one case, the history of syphilis, the positive Wassermann reaction and the transient benefit under antisyphilitic medication suggested the possibility of a gumma, but the rapid disturbance in vision compelled immediate operation, which proved to have been fully justified as the growth was a true fibroma. Headache, dizziness and deafness in one ear or subjective sounds in the ear first brought the patients

to the clinic; then came vomiting and choked disc. The operation was done in two sittings with an interval of from six to nine days. The intervention has been borne much better since it has been the practice to maintain permanent subcutaneous saline infusion during the first sitting. No attempt is made to drain the site of the tumor since one patient succumbed to secondary infection from this cause. Six of the patients died; four were discharged much improved. This brings to fifty-one the number on record of tumors of this kind given operative treatment. Excluding the incomplete operations, twenty-nine of the remaining forty-four patients died during or soon after the operation, including six who did not survive the first sitting. Shock or paralysis of the respiration or heart centers was the fatal factor in most of the cases; fulminating hemorrhage as the tumor was being shelled out was the cause in three cases. Fifteen patients bore the operation well and eleven are still in comparative health from one to eighteen months since the operation. The end-result depends, naturally, on the degree to which the nerves in the region have been injured by the tumor before its removal, especially the optic nerve. The younger the patient and the smaller the tumor, the better the outcome. An operation should be advocated in every case, he affirms, in which the general condition is still good and the medulla oblongata does not show signs of injury. The tumors are generally readily shelled out, even when they have attained quite a large size.

82. **Functioning of the Stomach After Gastro-Enterostomy.**—Schüller has examined forty patients to determine present conditions after a gastro-enterostomy, and here analyzes the findings in twenty-five, including thirteen cases in which the pylorus was resected. The findings teach the necessity for making the opening at the lowest point of the stomach after resection, and further that the gastric digestion nearly always suffers after a gastro-enterostomy. The conditions in regard to the passage of fluids along into the intestine differ in the human and the dog stomach after this operation.

84. **Treatment of Hour-Glass Stomach.**—Schlesinger and Nathanblut conclude from their analysis of two cases of hour-glass stomach that Roentgen-ray examination is indispensable for estimation of the conditions, and that a superposed spasmodic contraction may be relieved by medical measures and thus the whole clinical picture be so improved that operative treatment may be avoided.

Münchener medizinische Wochenschrift

March 14, LVIII, No. 11, pp. 553-608

85 *Temporary Eventration of Intra-Abdominal Organs for Roentgen-Ray Examination and Treatment. R. Werner and A. Caan.
86 Etiology of Puerperal Fever. H. Schottmüller.
87 Ubiquity of Paratyphus B. Bacilli. P. Schmidt.
88 Pharmacologic Study of Uterine Tonics. (Zur Pharmakologie und klinischen Dignität der Uterustonika.) M. Neu.
89 *Roentgen Rays in Diagnosis of Pregnancy. (Anwendung des Röntgenverfahrens bei der Diagnose der Schwangerschaft.) L. Edling.
90 Behavior of Blood-Pressure with Intravenous Injection of Salvarsan. (Verhalten des Blutdrucks bei intravenösen Salvarsaninjektionen.) R. Sieskind.
91 Jaundice After Injection of Salvarsan. (Ikterus nach Salvarsan.) E. Klausner.
92 Transverse Osteotomy to Correct Torsion of Leg with Club-Foot. (Torsion der Unterschenkelknochen bei angeborenen Klumpfüssen und ihre Heilung.) R. Purckhauer.
93 Preservation of Digitalis Leaves. (Wert der frischen Fol. Digitalis und ihre Konservierung.) M. Winckel.
94 Bolus Alba for Dressings. (Der Bolusverband, ein neuer steriler Wundverband.) J. Stumpf.
95 Finger and Toe Bones as Substitutes for Each Other. (Auswechselung von Finger- und Zehenknochen.) H. Wolff.
96 Eclampsia. W. Hannes.
97 Thucydides' Plague. (Das klinische Bild der Pest bei Thucydides.) Schröder.
98 Memorial Tribute to E. G. Janeway. H. Oertel.

85. **Eventration for Roentgen-Ray Treatment of Internal Organs.**—Werner and Caan have been applying the method suggested by Carl Beck for temporary eventration of inoperable cancers to submit them to the action of the Roentgen rays. They report their experiences with fourteen cases including nine with inoperable gastric cancer, two with advanced rectal carcinoma, and one each of a gall-bladder, ovarian or colon tumor. Besides the beneficial action of the radiotherapy, it is possible, by this means, to apply more radical local measures to the growth. They describe the technic with which they eventrated gastric and rectal cancers, keeping them exposed in this way for some time while the region around is fully protected. They think this method of temporary eventration should take the place of simple exploratory laparotomies and of gastro-enterostomies in most cases, and of other palliative measures. Five illustrations show the technic advocated for this "radiosurgery," as they call it.

89. **Roentgen Rays in Diagnosis of Pregnancy.**—Edling has found it possible to obtain instructive radiographs of the fetus as early as the beginning of the third month of pregnancy. Multiple gestation and abnormal positions and malformations can also be readily recognized by this means. He has been applying the Roentgen rays systematically to a number of pregnant women in the Malmö and Lund Hospitals, and has found the radiographs equally reliable for diagnosis of extra-uterine pregnancies. No harm from the procedure was ever detected.

Wiener klinische Wochenschrift, Vienna

March 16, XXIV, No. 11, pp. 371-410

99 Bacteriologic Revision of Aseptic Operations. (Untersuchungen über Asepsis.) V. Hecht and R. Köhler.
100 Action of Ferments on Tuberculin. T. Pfeiffer and H. Trunk.
101 *Syphilitic Disease of Auditory Nerve. (Erkrankungen des Akustikus bei erworbener Lues.) O. Mayer.
102 *Occurrence of Syphilitic Disease of Internal Ear in Early Stages of Syphilis. H. Frey.
103 Echinococcus Disease of Muscles and Skin. (Muskel- und Hautfinnen. Röntgennachweis verkalter Zystizerken.) K. Pichler.

101. **Disturbances in the Auditory Nerve with Acquired Syphilis.**—Mayer has been analyzing the histories of sixty-five cases of syphilitic affections of the auditory nerve observed at Graz since 1896, continuing the series of sixty-six previous cases reported at that date by Habermann. These series show that the auditory nerve is liable to become affected early after syphilitic infection, even as early as three weeks after the primary sore, and thus by the sixth week after infection. The auditory affection is most frequent during the first six months but it may not develop until after twenty-five or thirty years. Syphilitic affections of the auditory nerve generally commenced with subjective sounds in the ears and, in about half the cases, with dizziness. These symptoms were noted sometimes as part of the prodromal picture. In the later stages of secondary syphilis the ear affection usually develops accompanying recurring manifestations, in which case it may be regarded as part of the latter. The syphilitic affection of the auditory nerve almost always came on gradually and was more or less severe. It was generally bilateral or the deafness was more pronounced on one side than the other. In about half the cases vestibular symptoms were also observed, sometimes merely slight dizziness, in others severe vertigo accompanied by vomiting and serious disturbance in balance. An isolated affection of the vestibular nerve was never encountered in any of the 131 cases in the series, while this was the trouble in Urbantschitsch's five cases of disturbances in the auditory nerve after injection of salvarsan. Isolated disturbance in the vestibular nerve is extremely rare; Mayer knows of only two cases of the kind on record: Ruttin's case, in which no explanation for the disturbance was found, and Leidler's case in which the isolated affection of the vestibular nerve was traced to sausage poisoning. Ehrlich has reported vestibular symptoms in mice treated with arsacetin. These experiences show that the vestibular nerve may be injured by poisons which do not affect the cochlear nerve, and they sustain the assumption that the isolated vestibular disturbance observed after salvarsan may be the result of toxic action from this drug. The fact that not a single instance of an isolated vestibular affection was observed in the sixty-five cases of Mayer's series of syphilitic disturbances of the auditory nerve certainly sustains this assumption. Another argument in favor of it is the fact that the vestibular disturbances developed so soon, within a few hours of the injection of salvarsan, and, further, that such a comparatively large number of cases have been observed within such a short period. In conclusion Mayer reiterates that true syphilitic disturbances in the auditory nerve are not so infrequent as some have asserted recently, while, on the other hand, they differ in many respects from those which have been observed after injection of salvarsan.

102. **Disturbances in the Auditory Nerve with Acquired Syphilis.**—Frey reviews the literature on this subject citing thirty-five authors and adding that auditory affections for which syphilis is responsible are probably more common than is generally recognized as attention has not been attracted particularly to them until recently and only the more striking cases have been reported.

Zentralblatt für Chirurgie, Leipsic

March 11, XXXVIII, No. 10, pp. 345-384

104 Mixed General Anesthesia. (Ueber Injektionsnarkose mit Pantopon-Skopolamin.) G. Brüstlein.
105 Drainage of the Thorax. M. Tiegel.

March 18, No. 11, pp. 385-416

106 Etiology of Cleft Palate. (Zur Entstehung der angeborenen Gaumenspalte.) W. Kramer.
107 Operation for Umbilical Hernia with Extensive Excision of Fat. (Die Nabelbruchoperation mit ausgedehnter Fettexzision.) F. Oehlecker.

Zentralblatt für Gynäkologie, Leipsic

March 18, XXXV, No. 11, pp. 433-472

108 *Progress Forward or Backward. (Vermeintlicher Fortschritt und Rückzug.) B. Krönig.
109 *Etiology of Eclampsia. A. Dienst.
110 The Suprasymphyseal Transverse Incision. (Zur Diskussion über den suprasymphysären Fascienquerschnitt.) R. Klotz.
111 Hypnosis. (Täuschung oder Wirklichkeit?) H. Fulda.
112 Shortening the Ligaments for Uterine Prolapse and Retroversion. (Die Verkürzung der Ligamenta cardinalia bei Prolaps und Retroversionen durch W. M. Polk in Neuyork.) J. Kocks.

108. This is a denunciatory reply to Roth's article summarized in these columns, March 25, page 935.

109. **Etiology of Eclampsia.**—Dienst ascribes eclampsia to the injury resulting from accumulation of fibrin ferment from destruction of polynuclear leukocytes used up in the pregnancy. The fibrin ferment or thrombin accumulates in the liver, and in consequence of the congestion in this organ and the mechanical hindrance to the circulation in the vena cava from the pressure of the large uterus at term, the fibrin ferment does not get into the blood as under other conditions and thus does not come in contact with the antithrombin. The liver suffers from this accumulation and is no longer able to produce the necessary antithrombin in sufficient amounts. Then the fibrin ferment accumulated in the lower part of the body in such large amounts is suddenly mobilized when labor commences, and the blood is thus suddenly overwhelmed with a flood of it. This explanation of the *origin* of eclampsia has been sustained, he asserts, by his experimental research.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 9, XXXII, No. 30, pp. 315-322

113 *Experiences with Contracted Pelvis. (Casistica dei bacini ristretti) O. Rigamonti.

March 12, No. 31, pp. 323-338

114 Fracture of the Pubis. (Frattura del pube con rottura dell'uretra e della vescica.) M. Fasano.

March 14, No. 32, pp. 339-346

115 Pathogenesis of Rigidity of Abdominal Walls. (Sulla patogenesi della tensione addominale.) U. Fabris.

113. **Contracted Pelvis in Italy.**—Rigamonti states that the custom of carrying a basket on the back, the *gerla*, in common use in the Italian mountains, has a tendency to deform the pelvis, reducing particularly the anteroposterior diameter. He found contracted pelvis in 52 of the 399 women he has delivered in the last three years in his practice in an Italian mountain district with a population of 3.500. Every one of the women with contracted pelvis had been accustomed to carry heavy burdens on her shoulders in this way from the age of about 11.

Policlinico, Rome

March 12, XVIII, No. 11, pp. 326-356

116 *Electricity in Treatment of Post-Diphtheritic Paralysis of the Velum. G. Fumarola.

Riforma Medica, Naples

March 13, XXVII, No. 11, pp. 281-308

117 Spasm of the Larynx. (Laringismo.) F. Massei.
118 Tint and Spectrum of Normal Blood Serum (Colore e spettro del siero sanguigno normale.) D. De Sandro.
119 Causes of Errors in Localization of Lesions in the Brain. (Diagnosi di sede delle alterazioni e dei tumori encefalici.) G. Finzi.
120 Major Operations Under Primary Ether Anesthesia.- (L'ebbrezza eterea alla Sudeck specie in operazioni di lunga durata.) G. Gheza.

116. **Postdiphtheritic Paralysis of the Velum.**—Fumarola reports five cases of paralysis of the velum following diphtheria in which he applied Larat's technic for electric treatment. In the first three cases the paralysis dated from twenty and forty days and rapid relief followed three or four sittings, with a complete cure after eight and eleven. No benefit was anticipated in the fourth case as the paralysis was of seventeen years' standing, and none was realized. In the fifth case, the electric treatment was commenced too soon, while the diphtheritic neuritis was still in progress, the sixth day after the first signs of trouble. The consequence was an aggravation of both subjective and objective symptoms; this case teaches the importance of waiting for the subsidence of the neuritis before commencing treatment. The current may be a rapid intermittent faradic or the alternating sinusoidal. It should be turned on for about fifteen minutes. The patient should feel it but not enough to cause pain. One of the large electrodes is placed at the back of the neck and the current is closed by placing the hands or feet in a basin of water.

Hospitalstidende, Copenhagen

February 8, LIV, No. 6, pp. 137-168

121 *Rapid Eating in Origin of Gastric Disease. (Om Madslugningens ætiologiske Betydning for Ventrikellidelser.) E. A. Hallas.

February 15, No. 7, pp. 169-192

122 The Wassermann Reaction in Danish Imbeciles. (En Undersøgelse af de aandssvage i Danmark ved Hjælp af Wassermann's Reaktion.) O. Thomsen, H. Boas, B. Hjorth and W. Leschly.

February 22, No. 8, pp. 193-224

123 *Non-Operative Treatment of Cancer. (Den ikke-kirurgiske Behandling af Kræft.) T. Rovsing.

March 1, No. 9, pp. 225-248

124 Syphilis Transmitted to Infant at Birth. (Et Tilfælde af Syfilis erhvervet ved Fødslen: Smitte fra Moder til Barn.) P. Haslund.
125 Croupous Pneumonia in Greenland. A. Bertelsen.

March 8, No. 10, pp. 249-272

126 Case of Polypous Sigmoiditis. H. A. Sølling.

March 15, No. 11, pp. 273-304

127 Case of Lympho-Endothelioma. K. Secher.
128 Two Cases of Obstruction from Meckel's Diverticulum. T. L. Smith.
129 Fatal Ether Accident. (Et Dødsfald ved Aeternarkose.) J. Sturup.

121. **Hasty Eating in Origin of Stomach Disease.**—Hallas found in examination of thirty-two idiots signs of abnormal stomach functioning in no less than twenty-two. All the patients were inmates of the asylum and none chewed food properly. Akesson has also reported six patients with achylia in thirteen imbeciles examined who swallowed their food hastily, while there were signs of abnormal gastric functioning only in five of nineteen who ate more hygienically. Hallas thinks that the insane asylums offer facilities for study of gastric affections better than can be obtained elsewhere, as the patients are under observation for long periods.

123. **Non-Surgical Treatment of Cancer.**—Rovsing's article was read to open the discussion on this subject at the recent international cancer conference at Paris. He has had wide experience with various non-operative means of treating cancer, the results being negative with trypsin in his fifteen cases; fulgurization he has never tried as it cannot be thoroughly curative, while it is too painful for a palliative measure. His experience has been more favorable with Roentgen-ray treatment, especially in a number of cases of small rodent ulcers of the face. He has become convinced that the Roentgen rays actually promote the growth of carcinomas. On the other hand, they have a curative influence on some sarcomas. It is impossible to say, however, which sarcomas are going to yield to this influence; the action is local, having no effect on metastases elsewhere. At the same time he reports the complete subsidence of a sarcoma in the neck in two cases and of an osteosarcoma in three under Roentgen-ray treatment, but only one patient is still in good health to date. The details of this cured case are given with illustrations. This case seems to show that the sarcoma first must be opened up so that it can be directly exposed to the action of the rays. The sarcoma in this case was on the top of the head and after twenty-one exposures in seven weeks not a trace of it was left. The scalp flap was then replaced and five series of exposures were made later. There has been

no sign of recurrence during the four and a half years since. Rovsing thinks that radium may be counted on for a similar curative local action for cancer but, like the Roentgen rays, there is no general action. He also reports retrogression of a cancer after inoculation of erysipelas streptococci. The resulting erysipelas had an unmistakable curative action on the sarcoma on the forearm but the patient succumbed to unsuspected metastasis in the lungs. He adds that the success of salvarsan in syphilis suggests the possibility of an effectual arsenic treatment of cancer. His experiences were still more promising, he states, with vaccination according to Wright's technic. He has applied this since May, 1909, in seven cases of sarcoma, seven of carcinoma of the breast, one of cancer of the bladder, one of the vulva and one of epithelioma of the cheek. No permanent benefit was apparent in the carcinoma cases, but with sarcoma the outlook is more promising; he has two patients who seem to have been permanently cured by this means, one of a recurring sarcoma in the liver and the other in the thigh. There has been no sign of further trouble during the five and nine months since. He is inclined to accept the possibility of direct contagion of cancer. In his own family an uncle, 70 years old, had an ulcerating osteosarcoma. His young daughter tended him and soon developed universal sarcomatosis, fatal in two months. He knows of other cases in which daughters who tended a mother with cancer of the breast also developed cancer. He cites further statistics showing that in the Sorø district cancer is extremely prevalent, while scarcely any cases are known in the Aalborg district. He knows of houses where the people moving in get cancer; in one house at Faxe occupied by several physicians in turn they developed sarcoma and died in the course of a year or two—these experiences speak against the assumption of embryonal factors and point to infection. They are only clinical observations, he adds, but he is convinced that the microbe will some day be found which will explain them. In the discussion of Rovsing's article, Poulsen stated that he has kept records of 400 cancer patients after radical treatment, and nearly all have succumbed since to cancer, if not to metastasis, to a primary cancer at some other point. He even ventures to say that when a human being is once operated on for cancer, he will, if he lives long enough, certainly die of cancer.

Hygiea, Stockholm

February, LXXIII, No. 2, pp. 130-252

130 *Roentgen-Ray Examination of Kidney Pelvis. (Pyelografi.) E. Key.
131 Sigmoiditis, Diverticulitis and Perisigmoiditis. A. Hedlund.
132 Improved Technic for *Artificial Anus After Resection of* Intestines. (Metod att anlägga anus præternaturalis i vissa fall af tarmresektion.) K. Dahlgren.
133 Progressive Deafness. (Om otoskleros och andra former af kronisk progressiv döfhet.) J. Möller.

130. **Roentgen Findings of the Kidney Pelvis.**—Key discusses the technic for pyelography and the extremely instructive and reliable findings thus to be obtained. He gives them as found in twenty-one cases with the detailed clinical histories and commends it as a harmless method for examination. The method could not be applied in three of the cases described on account of tuberculous ureteritis or other cause.

Ugeskrift for Læger, Copenhagen

March 16, LXXIII, No. 11, pp. 357-404

134 *Chondrotomy for Apical Disease. (Om den operative Behandling af Spidseftise og Emfysem—Freund's Operation.) E. Brandorff.

134. **Chondrotomy for Apical Disease.**—Brandorff reviews the articles that have been published on Freund's operation to restore elasticity to the upper part of the chest wall. He has found forty-five cases on record, to which he adds four done in Denmark. The results have been very encouraging. When the operation is done on one side at a time, it seems comparatively free from danger.

Correction: Louse, Not Flea, Transmitter of Typhus.—Prof. Russell M. Wilder, Chicago, calls attention to the fact that in The Journal, April 8, p. 1073, in the abstract of an article by Nicolle in the *Annales de l'Institut Pasteur*, the word flea is used in place of louse. Mr. Wilder says that Nicolle's work has all been with the body louse, *Pediculus vestimenti*, and it is with this insect that he obtains transmission of typhus to monkeys, *not* with the flea. Mr. Wilder is correct. Nicolle states expressly that his experiments with fleas and bedbugs were constantly negative. The prophylaxis of typhus is much easier with the body louse than with the flea, as soap and water and clean linen, Nicolle says, will usually banish lice, whereas fleas are harder to get rid of.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Text-Book of Operative Surgery. By Dr. Theodor Kocher, Professor of Surgery and Director of Surgical Clinic in the University of Bern. Third English Edition. Authorized Translation from the Fifth German Edition by Harold J. Stiles, M.B., F.R.C.S., Edin., Surgeon to the Chalmers Hospital, Edinburgh, and C. Balfour Paul, M.B., F.R.C.S., Edin., Assistant Surgeon, Royal Edinburgh Hospital for Sick Children. In Two Volumes. Cloth. Price, $12 net. Pp. 723, with 415 illustrations. New York: The Macmillan Co., 1911.

The Applicability to Medicolegal Practice in India of the Biochemical Tests for the Origin of Blood-Stains. By Lieut.-Colonel W. D. Sutherland, M.B., I.M.S. (Edited by the Director-General, Indian Medical Service). Scientific Memoirs. By Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 39. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India. Paper. Pp. 35. Calcutta: Supt. Government Printing, 1910.

The Wassermann Sero-Diagnosis of Syphilis in Its Application to Psychiatry. By Dr. Felix Plaut, Scientific Assistant in the Psychiatric Clinic of the University of Munich. Authorized Translation by Smith Ely Jelliffe, M.D., Ph.D., Professor of Psychiatry, Fordham University, New York, and Louis Casamajor, A.M., M.D., Assistant New York Neurological Institute. Nervous and Mental Disease Monograph Series No. 5. Paper. Pp. 188. New York: The Journal of Nervous and Mental Disease Publishing Co., 1911.

What Shall I Eat? A Manual of Rational Feeding. By F. X. Gouraud, Formerly Chief of the Laboratory of the Medical Faculty of Paris. With a Preface by Prof. Armand Gautier, of Paris. Only Authorized Translation into the English Language by Francis J. Rebman. With a Glossary Containing Definitions of the Principal Technical Terms, and an Index of Diseases Referred to in the Text. Cloth. Price, $1.50. Pp. 379. New York: Rebman Co., (1911).

Clever Hans (the Horse of Mr. von Osten). A Contribution to Experimental Animal and Human Psychology. By Oscar Pfungst. With an Introduction by Prof. C. Stumpf. Translated from the German by Carl L. Rahn, Fellow in Psychology in the University of Chicago. With a Prefatory Note by James R. Angell, Professor of Psychology in the University of Chicago. Cloth. Price, $1.50 net. Pp. 274. New York: Henry Holt & Co., 1911.

The Social Evil in Chicago. A Study of Existing Conditions with Recommendations by the Vice Commission of Chicago (a Municipal Body Appointed by the Mayor and the City Council of the City of Chicago) and Submitted as Its Report. Chairman, Dean Walter T. Sumner, 117 North Peoria Street, Chicago. Paper. Pp. 368.

Verhandlungen der Berliner medizinischen Gesellschaft aus dem Gesellschaftsjahre 1910. (Separat-Abdruck aus der Berliner klinischen Wochenschrift.) Herausgegeben von dem Vorstande der Gesellschaft. Band XLI. Paper. Pp. 380, with illustrations. Berlin: L. Schumacher, 1911.

Thirty-Fifth Annual Report of the Ladies' Union Charitable Society (Incorporated), Conducting the Lawrence General Hospital and Children's Home. For the Year Ending Sept. 30, 1910. Organized Oct. 5, 1875. Paper. Pp. 69, with illustrations. Lawrence, Mass., 1910.

Die Behandlung der Frauenkrankheiten. Für die Praxis Dargestellt. Von Dr. J. Veit, Professor und Direktor der Universitäts-Frauenklinik in Halle a.S.Geb.Med.-Rat. Paper. Price, 8.20 marks. Pp. 242, with 34 illustrations. Berlin: S. Karger, 1911.

Thirteenth Annual Report of the Managers of the New Jersey State Village for Epileptics, Skillman, Somerset County, N. J. For the Year Ending Oct. 31, 1910. Opened Nov. 1, 1898. Paper. Pp. 22, with illustrations.

Forty-Fifth Annual Report of St. Francis' Hospital, East One Hundred and Forty-Second Street, New York. Under the Charge of the Sisters of the Poor of St. Francis. For the Year 1910. Paper. Pp. 46, with illustrations.

Diseases of the Stomach and Intestines. By Boardman Reed, M.D., Member of the American Medical Association. Third Edition. Cloth. Price, $5. Pp. 1037, with 112 illustrations. New York: E. B. Treat & Co., 1911.

Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States. For the Fiscal Year 1910. Cloth. Pp. 256. Washington: Government Printing Office, 1911.

Sketch of a Course of Chemical Philosophy. By Stanislao Cannizzaro (1858). Alembic Club Reprints, No. 18. Cloth. Price, 43 cents. Pp. 55. Chicago: University of Chicago Press, 1911.

Litora Aliena. By Medicus Peregrinus. Paper. Pp. 78. Price, 50 cents. Boston: W. M. Leonard, 1911.

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PRACTICAL EXPERIENCES WITH BERIBERI AND UNPOLISHED RICE IN THE PHILIPPINES *

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The advances made during the past year in placing the etiology of beriberi on a scientific basis have now proceeded far enough to warrant the inference that prophylactic medicine has the knowledge at its command to place this scourge among the preventable diseases.

While it has been possible to control outbreaks of beriberi in public institutions in the Philippines during the past ten years by reducing the rice in the diet and replacing it with meat, vegetables, mangoes, etc., yet it was not until the 1910 meeting of the Far Eastern Association of Tropical Medicine that a rational method for the prevention and cure of the disease became available. This was due to the papers on this subject read at the meeting, especially those presented by Foster and by Aron.

Briefly, it will be remembered that these authors showed by experimental data that beriberi in man and polyneuritis in fowls could be caused by using, as the staple article of diet, rice from which the outer portion or pericarp had been removed; and that, unless advanced degeneration of the nerves had occurred an immediate amelioration of the symptoms took place when rice with the pericarp, or its equivalent, was substituted.

Numerous analyses of rice sold in the Manila market have been made by Dr. Aron, and these showed that Saigon rice Number 2, and locally polished rice almost invariably contained less than 0.4 per cent. of phosphorus pentoxid. (It is desired here to digress for a moment for the purpose of stating that the amount of phosphorus in rice is given only because it is a ready method for determining the degree of polishing that a given rice has undergone; in other words, it is a laboratory method of ascertaining whether much or little of the pericarp has been removed and at this time it cannot be said that the lack of it causes beriberi.) Unpolished or slightly polished rice was found to contain from 0.5 to 0.75 per cent. of phosphorus pentoxid.

Since the opening of the Culion Leper Colony in 1906, rice has been the staple article of diet, and it was customary to use either Saigon rice Number 2, or local polished rice. Beriberi was more or less continuously present until February, 1910. By substituting meat and mangoes for rice it was always possible to reduce the number of beriberi cases, but the disease was never completely eradicated. It was found later that this failure was probably due to the fact that many of the lepers preferred to deny themselves food rather than eat mangoes, so that the authorities had starvation as well as improper diet to deal with.

The total number of deaths at Culion by months from February, 1909, to February, 1910, among an average population of 1,537, was as follows: February, thirty-nine; March, fifty-four; April, fifty-two; May, forty-seven; June, forty-eight; July, fifty-seven; August, sixty-one; September, sixty-five; October, forty-three; November, eighty; December, 188; January, 164; or a total of 898: of this number a total of 309 were due to beriberi.

In February, 1910, the use of unpolished rice was made compulsory for all inmates of the Culion Leper Colony.

The total number of deaths by months from February, 1910, to February, 1911, among an average population of 1,952, or a 27 per cent. greater population, was as follows: February, sixty-six; March, thirty-six; April, twenty-nine; May, twenty-two; June, twenty-seven; July, fifteen; August, twenty-four; September, twelve; October, thirteen; November, fifteen; December, fifty-eight; January, fifty-two; or a total of 369, a reduction in the deaths of over one-half.

Of this number there were no deaths from beriberi after February, 1910. The increased death-rate in December and January was due to an acute outbreak of bacillary dysentery, or even a better showing would have resulted.

At the end of January, 1910, there were approximately fifty patients with beriberi undergoing treatment in the Culion Hospital. On the suggestion of Dr. Aron, 15 grams of rice polishings mixed with milk and sugar were given to these patients twice daily. Two patients in very advanced stages of the disease died within a few days after this treatment was begun; all the others began to improve. Within two weeks half of the number were able to leave the hospital, and within four weeks every patient with beriberi was reported as cured by the attending physicians of the hospital. So much for Culion.

Prior to May, 1910, beriberi was very common throughout the Philippines—in jails, lighthouse stations, charitable institutions, on Government vessels, and among the Filipino troops of the U. S. Army. An investigation has shown that it was the invariable practice to use polished rice as the staple article of diet in all of the places mentioned. In May, 1910, an executive order was issued by the Governor-General of the Philippine Islands prohibiting the use of polished rice

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* Read at the eighth annual meeting of the Philippine Islands Medical Association, Manila, P. I., Feb. 23, 1911.

in all public civil institutions. Since August, 1910, only two cases of beriberi in the above places have come to my attention. One of these was among the crew of the steamer *Rizal*. An inspection of the ship's stores showed that the crew's rice was of the white polished variety. Further inquiry elicited the fact that it was customary for most of the crew of this vessel to use a varied diet, which may account for the fact that there were not more cases. The other case occurred in a prisoner in the Tacloban jail. The physician in charge reported that it had not been possible to purchase unpolished rice at Tacloban and for that reason polished rice was being used. He added, however, that every effort was being made to comply with the spirit of the executive order by using more meat, mangoes, potatoes, green vegetables and fish.

At the Hospicio San José, which is an insane hospital, orphan asylum and asylum for the aged, of over 700 inmates, beriberi had been constantly present at least during the past ten years. Since June, 1910, unpolished rice has been used and a few weeks afterward beriberi disappeared, and since then no further cases have been reported.

Extensive inquiry made throughout the Philippine Islands has almost invariably shown that in districts in which hand pounded or, in other words, unpolished rice is commonly used, there is little if any beriberi; whereas in districts in which machine or polished rice is used as the staple article of diet, beriberi is common. An apparent exception to this general rule is found, however, among the residents of the Batanes Islands. It may be mentioned that these are isolated islands north of Luzon and south of Formosa which have communication with the outer world only a few times each year, and owing to their inaccessibility they generally escape visitations of cholera and many other dangerous communicable diseases.

The Batanes are poorly adapted to rice culture, and for this reason considerable polished rice is imported each year, and it would seem reasonable to infer that if the present theories with regard to the etiology of beriberi are correct cases of this disease should be encountered. An investigation of the dietary of the inhabitants of these islands shows, however, that meat and potatoes are more commonly used than in other parts of the Philippines. In brief, food of various kinds, other than rice, is so plentiful that rice is not the staple article of diet to the same extent as it is elsewhere in the archipelago.

Considerable difficulty has been encountered and much opposition has resulted from the attempt to introduce unpolished rice on a large scale in the Philippines. When the Army and the insular government entered the market to purchase large quantities of unpolished rice it developed that the dealers were unable to supply the demand, because managers of rice mills refused to adjust their process of manufacture to meet the new requirements. This resulted in large quantities of rice being used that came from the mills immediately after it was husked.

The machines that are used locally for this purpose let many of the smaller rice grains pass through without the husks being removed from them. Previously such rice went directly to the polishing machine which not only polished the rice, but removed the husks from such grains as still retained them, so that the finished product was clean. It was apparent then that much of the unpolished rice that was issued in the beginning was not very clean and contained many husks This gave rise to much complaint among those who were required to use it. It was frequently alleged that the husks tickled the throats and often caused gastritis. On investigation, no reliable evidence as to the gastritis could be obtained. Commissary officers, prison wardens, and others who were directly charged with carrying out the orders to use unpolished rice, were constantly besieged with complaints and it was but natural that they should take the course of least resistance and recommend that its use be discontinued. To add to the difficulties of those who were insisting on the use of unpolished rice, the rumor spread that unpolished rice when stored in bulk soon spoiled, thus causing great financial loss. Investigation of this matter showed that there was no reason to believe that unpolished rice, when stored under the same conditions as polished rice, spoiled more quickly.

A campaign of education was then begun. Dr. Aron frequently went to the rice mills in person and was invariably able to demonstrate that rice could be rendered clean and free from husks without polishing it to a degree that would be harmful. Similar work, with like results, was accomplished by Highet in Siam, so that it may now be said that clean, unpolished rice, satisfactory in appearance, can be obtained in the Philippines and abroad, and that the original objections to its use no longer exist.

By January, 1911, so much evidence had accumulated that unpolished rice was an important factor in the prevention of beriberi that it was deemed most desirable to bring about its general use in the Philippines, for a few years at least, in order to test the theory thoroughly. At the most, no harm can result, and on the other hand there is every promise that many hundreds of lives may be saved and a still greater morbidity avoided. Experimental investigations made by Dr. Aron showed that a rice which has only been polished to a point where it still contains 0.4 per cent. of phosphorus pentoxid may be regarded as incapable of producing beriberi. Almost coincidently, similar conclusions were announced by Highet.

For purposes of convenience, then, a rice that contains less than 0.4 per cent. of phosphorus pentoxid is regarded as polished rice, and that which contains a greater percentage of phosphorus pentoxid is regarded as unpolished rice.

Accordingly, a bill was drafted which had for its purpose the bringing about of the general use of unpolished rice in those places where rice was the staple article of diet. After considerable discussion with physicians, lawyers, legislators and others, it was deemed advisable to attempt this with a law that would impose a tax of 5 centavos (2½ cents U. S. currency) per kilo on all polished rice sold, whether foreign or domestic.

Owing to the fact, however, that the legislature adjourned during the early days of February, there was not sufficient time to present this matter to both of its branches.

On account of the successful experience with unpolished rice in the prophylaxis of beriberi in the Philippines during the year, and since these data confirm the work of Fraser, Stanton, Aron, Kilbourne, de Haan and Highet, as reported at the last annual meeting of the Far Eastern Association of Tropical Medicine, it is believed that the time has come for the medical profession to aid in completing the last step in the test which promises to place another weapon in the hands of prophylactic medicine for the eradication of another of the world's serious and costly diseases.

THE RELATION OF PREMENSTRUAL FEVER TO PULMONARY TUBERCULOSIS:

A STUDY OF ONE HUNDRED CASES [*]

LEO KESSEL, M.D.
NEW YORK

In 1861 Fiedler[1] drew attention to definite rises in temperature occurring with anomalies in menstruation, particularly dysmenorrhea. He noticed that fever occurred one or more days preceding the menstrual period and disappeared rapidly with the onset of the menses. He called this "menstrual fever" and thought that it was due to an anomaly in menstruation, but not to an inflammatory process. At times since, physiologists have studied the changes occurring in the circulation, temperature and metabolism associated with menstruation; gynecologists have seen an increase in inflammatory pelvic conditions, or a lighting up of those which had been seemingly latent at this time, and finally, internists have noted the influence of menstruation on pulmonary tuberculosis, particularly the aggravation of subjective symptoms and an increase in the physical signs and temperature changes (F. Neuman[2]). Macht[3] has recently published a review and a careful study of the history of the subject and has indicated the relation between menstruation and tuberculosis, from the point of view of physiology and internal medicine. He states that the heat-regulating apparatus in woman seems to be peculiarly unstable at the time of menstruation; that those who have studied the temperature charts of tuberculous patients at this time have been impressed by the constancy and regularity of these periodic menstrual exacerbations in temperature which seem to differ only as to the frequency of occurrence. The difference in figures, he believes, is due to carelessness in temperature observations, and to disregard of relative rises in temperature; he quotes Mantoux,[4] to the effect that fever may exist without hyperthermia. Macht studied forty cases and states that 50 per cent. showed periodic monthly exacerbations. The cases are not given in any detail whatever and some of the patients were, furthermore, being treated with tuberculin at the time of observation. He finds that rises in temperature may occur in early, as well as in advanced cases, and in the former, are of diagnostic importance. In an extended experience with tuberculosis patients, I was quite unable to substantiate the observations made by Macht, or indeed those of any of the other observers, including Riebold. I consider it of interest, therefore, to add the facts gathered from our patients to indicate the variant findings. Before turning to the cases to be reported a review of the literature directly related to this phase of the subject may be of interest.

In 1899 Turban[5] described a temperature curve with a rise preceding the menstrual period by three to five days and a depression following it. Nine years later he (Turban[6]) presented curves showing premenstrual, intermenstrual, menstrual and postmenstrual temperature rises. The first mentioned he considered diagnostically the most important. Without giving the criteria for his observations he mentions that seventy-three of 100 tuberculous women showed this premenstrual fever on several occasions. Following Turban, Saugman,[7] Sabourin,[8] Kraus,[9] and Jessen[10] laid stress on the fact that premenstrual fever lent evidence to the existence of pulmonary tuberculosis.

Riebold[11] made careful studies of the periodicity of menstruation, the relation[12] between menstruation and ovulation and their influence[13] [14] on disease. He believes that menstruation is dependent on ovulation, and usually follows this by one, two, or three days; that ovulation, not menstruation, is the process which is strongly periodical and that the periodicity in woman's life processes is dependent on it. The question whether this characteristic periodicity is inherent in the actively functionating ovary, or whether external, special cosmic influences play a rôle, he thinks must remain for the present unanswered. He advances the theory that during ovulation certain secretions reach the circulation and that these cause an increase in nervous and psychic irritability, increase in blood-pressure and vital energies, general heightening of metabolic processes, and an accompanying vigorous hyperemia of internal organs and activity of lymph-flow. During such a period of increased physiologic activity, the opportunity is offered for resorption from old infectious foci, for the lighting up of latent processes, or for an increase in activity of acute infections already present, which thus become the cause of premenstrual fever. He has later shown from a study of a large series of cases, that premenstrual rises in temperature occur in a great variety of diseases, such as acute infectious diseases, anginas, gynecologic and neurologic conditions.

I have for some time been impressed by the absence of this so-called premenstrual fever in cases of definite pulmonary tuberculosis. The mention in the literature of its frequent occurrence and the emphasis placed on its diagnostic significance led to the study of the following 100 cases. These cases were observed at Bedford, N. Y., in a sanitarium, in which the hygienic conditions were especially favorable. The sanitarium is devoted to the treatment of tuberculous patients only. The patients were under constant observation; a few were confined to bed, but the majority were up and about. Of these 100 cases forty-seven were incipient, thirty-nine moderately advanced, fourteen far advanced, classified according to National Association classification.[15]

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[*] From the Montefiore Home Country Sanitarium, Bedford Station, Westchester County, N. Y.

[1] Fielder: Die Verhältnisse der Körperwärme in verschiedenen fieberhaften Krankheiten: Manuskript, 1861-2; quoted by Riebold, Deutsch. Arch. f. klin. Med., 1908, No. 93, p. 15.

[2] Neuman, F.: Beziehung zwischen Menstruation und Lungentuberkulose, Berl. klin. Wchnschr., 1899, No. 21.

[3] Macht, D. I.: Tuberculosis and Menstruation, Am. Jour. Med. Sc., December, 1910, p. 835.

[4] Mantoux: Revue de la Tuberculose, October, 1905.

[5] Turban, K: Beiträge z. Kenntnis d. Lungentuberkulose, 1899.

[6] Turban, K.: Menstruation und Lungentuberkulose, Verhandl. d. 25 Kong. f. inn. Med., 1908.

[7] Saugman: *In von Schröter und Blumenfeld's Handbuch der Therapie der chronischen Lungenschwindsucht*, 1904.

[8] Sabourin: La fièvre menstruelle des phthisiques, Revue de méd., March, 1905.

[9] Kraus, H.: Ueber praemenstruale Temperatur-Steigerung bei Lungentuberkulose, Wien. med. Wchnschr., 1905, No. 13.

[10] Jessen: Lungenschwindsucht und Nervensystem, Monographie Jena, Fischer, 1905.

[11] Riebold, G.: Der Nachwais des Vorhandenseins somatischer Perioden in weiblichen *Organismus und ihrer* Abhängigheit von kosmischen Perioden, Arch. f. Gynäk., 1907-1908, lxxxiv, 182.

[12] Riebold, G.: Ueber die Wechselbeziehungen zwischen dem Ovulationsvorgang inkl. der Menstruation und inneren Krankheiten, München med. Wchnschr., 1907, No. 38, p. 1868; No. 39, p. 1935.

[13] Riebold, G.: Ueber periodische Fieberbewegungen mit rheumatischen Erscheinungen bei jungen Mädchen, Deutsch. Arch. f. klin. Med., April 24, 1908, p. 15.

[14] Riebold, G.: Ueber praemenstruelle Temperatur-Steigerungen, Deutsch. med. Wchnschr., 1907, Nos. 11 and 12.

[15] Classification adopted by National Association for Prevention and Study of Tuberculosis: *Incipient:* Slight initial lesion in the form of infiltration limited to apices or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms. *Slight or no elevation of temperature* or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent. *Moderately advanced:* No marked impairment of function either local or constitutional. Localized consolidation moderate in extent, with little or no evidence of destruction of tissue or disseminated fibroid deposits. No serious complications. *Far-advanced:* Marked impairment of function, local and constitutional. Localized consolidation intense; or disseminated areas of softening; or serious complications.

The average period of observation was nine months. Rectal temperatures were taken in all but one case. The sputum in ninety-two of these 100 cases contained tubercle bacilli; of the 8 remaining patients, the evidence for pulmonary tuberculosis was:

Case 1.—Patient aged 13. Six members of immediate family and one cousin had tuberculosis. Physical examination showed bilateral apical dulness and diminished breathing, more marked on left side. Intracutaneous and von Pirquet reactions were positive. No expectoration; laryngeal smear negative.

Case 2.—Patient aged 38. Non-tuberculous family history. A history of five years of weakness and cough; five months before admission, blood tinged sputum; slight dulness and shrinkage at right apex; diminished expansion at right base; ophthalmic, von Pirquet and intracutaneous reactions positive.

Case 3.—Patient aged 18. Non-tuberculous family history; gradually increasing weakness for one and one-half years; cough; thoracic pain; lowering of right shoulder; dulness, increased voice and increased muscular resistance at right apex. Reaction to 7 mg. of Koch's old tuberculin to 102 F.

Case 4.—Patient aged 16. Non-tuberculous history; hemoptysis on two occasions; dulness, diminished expansion and crackling râles at right base; intracutaneous, von Pirquet and ophthalmic reactions positive; 0.5 mg. tuberculin produced a rise of temperature to 101.4 F.

Case 5.—No history of exposure to tuberculosis; history of two years' cough; expectoration and pain in chest; dulness at right apex, with a few scattered râles to second space; dulness, diminished tactile fremitus, diminished expansion and a few moist râles at right base; intracutaneous reaction positive.

Case 6.—No history of exposure to tuberculosis; bilateral apical dulness; few fine râles at right first space; von Pirquet and intracutaneous reaction positive; reaction to 5 mg. tuberculin to 102.2 F.

Case 7.—Patient, aged 19. No history of exposure to tuberculosis; cough persisting after influenza; dulness and fine râles at left apex anteriorly and posteriorly; injection of 0.5 mg. tuberculin caused rise in temperature to 101 F.; locally moist râles at left supraspinous fossa; injection repeated with similar results.

Case 8.—Patent aged 21. No exposure to tuberculosis; hemoptysis two years ago; weakness, cough, slight expectoration, anorexia; dulness and dry râles after cough at right apex; impaired resonance, prolonged expiration and shower of fine râles at end of inspiration at left base; von Pirquet and intracutaneous reactions positive.

There are, then, ninety-two cases with demonstrated and eight with very probable pulmonary tuberculosis.

In ninety-six of these 100 cases, there was no evidence of premenstrual fever; i. e., no rise in temperature occurring within five days preceding the onset of a menstrual period. Neither did the patients show any elevation of the minimal temperature described by Saugman;[7] that is, an elevation of the lowest point in the diurnal temperature while still remaining below normal. The intermenstrual fever, described by von Voornveldt,[16] that is, a rise in temperature occurring thirteen to fourteen days after the onset of the preceding menstrual period, thus falling in the interval between two normal menses, was never present in my series. The four remaining cases, however, did show a rise in temperature; in detail they were as follows:

Case 9.—R. C., aged 16, single; case moderately advanced: observed twelve months, sixteen days; menstruated twelve times while under observation, and presented two premenstrual rises: (a) four days before menses, a rise from usual temperature of 99.5 F. to 101.6 F. for twenty-four hours; (b) three days before menses, rise to 103.2 F. for twenty-four hours.

Case 10.—L. K., aged 1[illegible], single; case moderately advanced; observed eleven months, twenty-three days; eleven periods; two premenstrual rises: (a) rise to 101 F. on third and fourth days before menses; usual temperature 99.2 F. to 99.8 F.; nine days preceding this same period, a rise to 100.8 F. had occurred; (b) rise to 101 F. twenty-four hours before menses; eight days preceding this a rise to 101.6 F. had occurred.

Case 11.—L. F., single; case incipient; tubercle bacilli in sputum; observed twelve months, twenty days. During this period the patient menstruated fourteen times; seven times preceding the onset of menstruation by twenty-four hours to forty-eight hours, and once, on first day of menstruation, her temperature reached 100 F. On eleven other occasions her temperature reached 100 F. and bore no relation to her menstrual period. A mitral and aortic endocarditis was a complication in this case. It is doubtful, therefore, whether an interdependence between the menstruation and tuberculosis can be maintained.

Case 12.—S. P., aged 20, married; case moderately advanced; observed nine months. A rise in temperature to 101.6 F. forty-eight hours preceding her menstrual period occurred on one occasion. It is interesting to note that just at this period the patient had a breast abscess.

It appears, therefore, that in the 100 cases of pulmonary tuberculosis, in all stages of the disease, here reported, only two uncomplicated cases of premenstrual fever occurred. It has been shown in a large series of cases (2,000)[14] that similar rises may occur in a large number of unrelated conditions. The proportion in which the rises occurred in my cases is out of all proportion to that assigned to it in literature; so I am forced to conclude that far too great stress has been laid on the incidence of premenstrual fever in tuberculosis. The theory of Riebold, which refers to the relation of ovulation to premenstrual fever, in dormant disease, is one which commends itself, but for which sufficient evidence is not yet present.

I wish to express my thanks to Dr. Kramer for aiding in the compilation of the statistics.

LEAD-POISONING IN ILLINOIS

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INTRODUCTION

Lead-poisoning in the United States is almost an unknown subject. Go through the literature and you will find here and there the report of an unusual case, an occasional compilation in a text-book, the material for which has had to be drawn from foreign sources; no experimental work, little study of the newer methods of diagnosis and no effort to gather statistical material or to bring the disease under the control of sanitarians.

When we began the study of the lead trades of Illinois we were assured that conditions here were very different from conditions in Europe; that lead-poisoning was a rarity, owing to our superior methods in industry. We found the reverse to be true. There is far more lead-poisoning in Illinois than in the same trades in England and Germany; at least in all those trades in which it has been possible to obtain anything like accurate figures. Far from being safer, American methods are often more dangerous than European, and while the German and English workman is not only better protected, but is under the supervision of an experienced physician, the American workman is, as a usual thing, under no medical supervision at all.

We found, in addition to the greater dangers arising from our methods of work, a very general ignorance of the hygiene of the lead trades on the part of the employ-

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16: Von Voornveldt: Ztschr. f. Tuberk., 1905, p. 543

ers. In Europe and England employers have been carefully trained in industrial hygiene, but here they have been taught nothing. The result is a mortifying contrast between our industrial morbidity rate and that of other countries.

The fundamental difference does not lie in the attitude of the American employer as compared with his European brother. A perusal of Parliamentary bluebooks shows that English employers in the lead trades have been just as vigorous in their objection to outside control of their factories as Americans could be. Nor does it lie primarily in the difference between the two classes of employees, although the isolation of the foreign-born workmen in America, the class who fill our lead industries for the most part, has undoubtedly something to do with their neglected state.

The great contrast appears when we look at the attitude of the medical profession in Europe. There the health of the working classes, the problems of trade diseases, have been and are still studies worthy to engage the best intellects; here, we leave them to a few overworked practitioners with no leisure to use their material. There, it is the medical man who gathers statistics showing the prevalence of lead-poisoning, who outlines the necessary reforms, and gets them embodied in the shape of laws. We find in this field such men as Brouardel, Sommerfeld, Pieraccini, Glibert, Teleky, Rambousek, to mention only one representative from each country. Here it would be difficult to point to any activity on the part of the medical profession. The American Medical Association has never had a single session devoted to the diseases of industry.

It is this very general neglect of one of the most prevalent of trade diseases which has induced me to try to present the results of a study of industrial lead-poisoning in one state, in the hope that by calling attention to the many and varied industries in which lead is used, the lack of protection against lead-poisoning in American factories, and the large numbers of men poisoned, the medical profession may be induced to take that interest in the question without which no reform can be hoped for. The admirable results obtained in England and on the Continent show that much of the lead-poisoning in industry is avoidable.

STATISTICS GATHERED IN ILLINOIS

It is difficult to give the exact number of trades which involve the use of lead, because the classification of trades may be made in so many different ways. One can count manufactured articles, or processes in the manufacture of articles. If we follow the latter method, which was Layet's when he computed that in France 111 industrial processes involved the use of lead, we shall find on our list some seventy industrial processes in Illinois in which lead or its salts are handled and which have caused lead-poisoning in recent times. The list is far too long to give in full, but it may be of interest to mention some of the more unusual industries, such as making and selling wall-paper, polishing brass, polishing nickel, finishing cut-glass, cabinetmaking carried on in the same room with the sandpapering of white lead paint; holding lead-covered nails in the mouth while shingling a roof; working with aluminum foil (7 per cent. lead) in lithography; zinc-smelting; making ornamental tiles (with a non-fritted lead glaze); wrapping cigars in tin-foil; enameling bath-tubs; laying electric cables; stopping the inequalities of wood with white lead in making automobiles; assembling and recharging old storage battery plates; polishing handles of coffins.

That it was difficult to find individual cases, anyone who has attempted to compile statistics of this sort will readily understand. The physicians interviewed could often give valuable information, but seldom remembered the details of single cases, and I can recall but four, three of them foreign-born and trained, who kept written records, other than financial, of their cases. Consequently the 578 individuals on our list represent only a fraction of the real number, but as the record stands it is very startling when one compares it with the records in other countries. In the English and German reports we have statements based on the careful medical inspection of each man employed, repeated once a week or once a month, according to the danger of the trade. Our figures are based on the study of hospital and dispensary[2] records and on the statements of some of the physicians, not nearly all, of course, whose practice is drawn from the workers in the lead trades. Considering the necessarily incomplete character of our figures, one would expect them to fall far below those of England and Germany, but the reverse is true.

WHITE LEAD

One of the large white lead factories in England employs 182 men. No man was poisoned there during the year 1910. A Düsseldorf factory had two cases of lead-poisoning among 150 men during the same year. On the other hand, an Illinois factory with about 142 employed throughout the year had twenty-five cases last year, and another employing from seventy to eighty men had eleven cases during two months' time, which, if kept up during the year, would mean sixty-six cases. The British statistics for 1910 show that in the district of Newcastle-on-Tyne 1,320 persons were employed in white lead works; five cases of lead-poisoning were reported for that year, or one in 264 men employed. One case was fatal. The figures for the same year in Illinois are between 425 and 450 men employed; sixty-three known cases of poisoning, or one for every seven men employed; three fatal[3] cases. These figures are, of course, open to criticism, for there were more men employed in the course of the year than the pay-rolls indicate, and there were persons with lead-poisoning who did not visit hospitals or dispensaries. One physician, for instance, gave us the names of three patients from one white lead factory and said that he had had more than twenty additional cases during the year. We, of course, entered on our list only the three cases.

LEAD-SMELTING

Bad as are the conditions in the white lead trade, it has at least the advantage of being admittedly a dangerous occupation, and in three of the four Illinois factories regular medical supervision of the employees has been introduced, the first step toward controlling industrial lead-poisoning. This is not as yet true of the lead-smelting industry, in which large numbers of men suffer from lead-poisoning and no apparent effort is made to protect them from it. According to physicians practicing among these men, the great majority, if not all, become poisoned sooner or later, if they remain at work for more than a few months.

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[2] These records are not always satisfactory. Meillere at the Brussels Congress of Industrial Hygiene, in 1910, said that to the average physician, as to the layman, lead-poisoning means colic or wrist-drop, an attitude of mind which he compared to that of a man who would say that [illegible] irium tremens. The large number of cases of [illegible] nephritis and heart disease among lead worke[illegible] the records of some hospitals and dispensaries, lead one to suspect that Meillere may be right.

[3] Our statistics of fatal cases are very incomplete. There is in the City of Chicago a curious ruling of the coroner's office by which every case of death by "poisoning" must be a coroner's case. Consequently, to save the family this needless annoyance, the physician makes out the death certificate for nephritis, arteriosclerosis, gastro-enteritis, etc.

I had the opportunity last summer to visit a large lead-smelting works at Ems, a place under the charge of one of Germany's foremost engineers and subject to the regular inspection of an experienced physician. The contrast between that plant and the best of ours in Illinois was so great that I could easily understand the difference in the morbidity rate of this trade in the two countries. Germany has systematically set herself to control conditions in lead-smelting and the results are shown by a fall in morbidity from 73.7 per cent. of all employed in 1885 to 0.8 per cent. in 1892.

STORAGE BATTERIES

Another trade listed abroad as very dangerous is the making of storage batteries or electric accumulators, as they are called over there. This does not seem even to be recognized as a lead trade in this country, either by physicians or factory inspectors. To make storage battery plates, grids of metallic lead with deep grooves must be filled and covered smoothly with a paste made of oxid of lead. It is a dusty trade and, in the absence of all regulation, a very dangerous one.

We found some cases of very rapidly developing and severe lead-poisoning among workers in storage batteries, and an amount of sickness quite disproportioned to the number of men employed, for Illinois has no large storage battery works. Two small places, one employing eighteen men, the other fifteen, sent each two men to hospitals with acute lead-poisoning within a period of nine months, while the Hart Accumulator Works in London, employing more than a hundred men, did not have one case of poisoning last year. The actual contrast would of course be more striking than this, for there were undoubtedly other cases of lead-poisoning in the Illinois factories. Only a small proportion of workmen go to hospitals for treatment.

PRINTING

It is unnecessary to give further figures showing the contrasting results of neglect in America and scientific control in Europe. That point is certainly clear. There are, however, some interesting facts concerning the all-important subject of occupation which were brought out during this investigation. The printer's trade was found to be much more dangerous than should be the case in these days of linotypes. This is a trade which suffers greatly from lack of ordinary hygienic control; accumulations of lead dust, the practice of dry-sweeping, the use of unhooded melting kettles with no provision for the removal of fumes and an insufficient lavatory equipment—all these are avoidable evils, but they are the rule, not the exception.

The fifty-seven cases of lead-poisoning found among printers were probably all due to the neglect of ordinary precautions. We found, as Sternberg of Austria has noted, that lead-poisoning in printers tends to assume the slow, chronic form, and that, in addition to the fifty-seven typical cases, the death records of the Typographical Union show an unduly large mortality rate from nephritis, heart disease and apoplexy.

COMMERCIAL ILLUSTRATION

The mechanical or commercial artists are a class we had not suspected to be exposed to lead-poisoning. One does not see them mentioned in foreign statistics, and when I inquired about them of the Factory Inspection Department in London, I was told that no cases of lead-poisoning in artists were ever reported in Great Britain. The discovery of the fifteen cases on our lists came as the result of a conversation with a young artist who had been referred to me by his physician as an "unusual case of zinc-poisoning." The man's history was absolutely typical and analysis showed that the paint he supposed to be zinc-white was really white lead.

The artists seem to suffer more than any other one class from their physicians' lack of acquaintance with industrial processes. The patient assures his doctor that he is using no lead paints, for it is the policy of many engraving houses to withhold from their artists the fact that they are using a dangerous lead paint. Consequently all sorts of erroneous diagnoses are made.

The young man I interviewed had been urged by three physicians to have his appendix removed, and a friend of his, well known in the trade, actually had four abdominal operations before the development of a typical radial paralysis revealed the real nature of his trouble. These artists work chiefly with white paint, and we found that all but four of the seventy-four places visited use white lead. The paint brushes are very fine and in order to get just the right degree of moisture and a fine point, the artists put their brushes in their mouths. In addition they use an "air-brush," worked with compressed air, which sends a stream of finely divided white paint over the picture and which is also used to blow off the superfluous paint after it is dry. Owing to the fact that it is a highly skilled, well-paid trade, the men are loth to leave it, and among the fifteen cases there were some of very severe poisoning.

LEAD-POISONING IN WOMEN

There are very few women on our lists and the fact that the lead trades in Illinois do not employ many women is a great advantage, for women are notoriously more susceptible to lead-poisoning than men. Our eighteen women were employed in polishing type with emery, making car-seals, dusting lead colors on litho-transfers, labeling paint-cans in an atmosphere of white lead dust, working with aluminum foil, making artificial flowers, wrapping cigars in tinfoil; one was a commercial artist.

The lead trades of Illinois are not as important as those of some of the large Eastern manufacturing states. Illinois has no large pottery works using lead glazes, or lead glass works or storage battery works of any importance, or rubber works in which white lead is used. There are probably several states in the Union which would yield a much larger return than Illinois to such an inquiry as this. Among the industries classed as lead trades in other countries, but not found in Illinois, are the weighting of silk, lace and passementerie with lead, file-cutting, polishing jewels, making white straw hats, white gloves, using lead glazes for pottery, enameled signs, etc., and making rubber goods. Lead-poisoning is undoubtedly an important trade disease in every state in the Union, for even those states which have little manufacturing have large numbers of painters and printers.

The general subject of lead-poisoning is too well known to need discussion, but it may be of value to give briefly the results of very recent studies in diagnosis and experimental pathology, especially as some of them are to be found only in the reports of the International Congresses on Industrial Hygiene, which are not easily accessible.

DIAGNOSIS OF LEAD-POISONING

The most important point in the diagnosis is universally stated to be the history of the patient's occupation, and this of course assumes, on the part of the diagnostician, an acquaintance with the industrial processes which involve the use of lead. One point should be mentioned in this connection, and that is the latest theory as to the localization of lead paralysis. It used to be assumed that lead had a selective action on certain muscles or certain nerves—according as this paralysis was held to be myogenic or neurogenic—first, the extensor muscles of the fingers and wrist; second, the muscles of the shoulder; third, the extensors of the foot. But close study of the motions involved in those processes in which lead-poisoning occurs, has led to the belief that overwork is the determining factor (Edinger, Teleky). The group of muscles involved in the paralysis of painters and printers includes those of the forearm and hand. Storage battery workers suffer from paralysis of the muscles of the shoulder (Labbé). File-makers grasp the chisel with the left hand, and have paralysis of the left fingers and thumb (Bernhardt, Leichtentritt). Children, who use their legs more than their arms, have paralysis of the leg muscles (Escherich, Variot); laborers, the muscles of the shoulders and legs (Pieraccini).

It can easily be seen, then, that the diagnosis of lead-poisoning in a case of paralysis may depend largely, if not entirely, on the physician's knowledge of the details of his patient's industrial history. His anamnesis may otherwise be of little value, for Tanquerel des Planches found that fourteen of his 200 patients with lead paralysis had no history of colic.

Next to the history the most important place has been assigned now to one diagnostic sign, now to another. At the Milan Congress of Industrial Hygiene in 1906, basophilic granulation of the red corpuscles was agreed on as the earliest and most unfailing diagnostic sign, but at the congress held in Brussels last September a change in opinion was evident. Biondi insists that the granules are merely evidence of the formation of new cells and as this process is intermittent the cells may be present one hour and absent the next, depending on the activity of the hematopoietic tissues. Even if present they must not be regarded as significant unless they reach appreciable numbers, according to P. Schmidt. At least 100 out of 1,000,000 red cells must contain basophilic granules and a count of as many as 300 to 3,000 is usual in lead-poisoning. Oliver stated that he did not find basophilia in most of his cases, and thought the diagnostic value of this sign very dubious. Rambousek failed to produce basophilia experimentally in rabbits which were undoubtedly lead-poisoned. The general verdict of the Brussels congress was that basophilic granulation of the red cells is a good positive, but a bad negative sign.

The value of the procedure advised by Du Moulin, smearing the carefully washed skin with sodium sulphid to produce the black sulphid of lead, has been much criticized of late, especially by von Jaksch and Rambousek, and will probably never be generally used.

As for the search for lead in the urine, there is a wide divergence of opinion between authorities. Oliver finds it present in almost all cases, and regards the test as one of the greatest importance. He found lead in the urine of a woman who had symptoms suggestive of lead-poisoning nineteen years after she had given up work in lead, during which time she had not been in any ascertainable way exposed to lead. Oliver frequently finds lead in the urine of patients with old chronic cases, and Edsall makes the same statement. Agasse, Lafont and Heim also state that lead can always be found in the urine in cases of lead-poisoning. On the other hand, von Jaksch says that the search for lead in the urine in the later stages of chronic lead-poisoning is negative, although lead is present in acute poisoning and in the early stages of chronic. Rambousek and Pieraccini both advise testing the stools for lead instead of the urine. They find lead in the feces constantly, but they doubt whether the kidneys play much part in its elimination.

The lead line on the margin of the gums, so valuable a confirmatory sign when present, is absent in some otherwise well-marked cases.

It is therefore generally held that plumbism is too variable in its development for any one sign or symptom to be regarded as diagnostic. The following is the group of symptoms which, when present, point to lead-poisoning: pallor, due to vascular spasm and disproportioned to the degree of anemia, foul breath, caries of teeth, gingivitis, loss of appetite, increased by the disagreeable taste in the mouth, recurrent attacks of weakness which may render fine work impossible, spots before the eyes, itching around the eyes, gastro-intestinal disturbances, diarrhea or constipation, loss of flesh, showing especially in the cheeks. If these symptoms, each one slight in itself, are present in a lead-worker, T. Weyl would diagnose lead-poisoning in an early stage. When colic has come on, the general vascular spasm is shown in the great pallor, the absence of sweat, even with extreme pain and restlessness, the slow hard pulse, low temperature, retraction of the abdomen, strangury and unconquerable constipation. Dyspnea from spasm of the smooth muscles and sudden, severe myalgia, especially in the flexors of the legs may accompany the colic (Weyl). Oliver finds that the pain is often localized on one side and that the pupils may be unequally contracted, the one on the affected side being the smaller. In such cases pressure on the pneumogastric nerve in the neck on the affected side shows great tenderness in this nerve. Potain finds the liver contracted during the attack of colic, and returning to its normal size after the attack is over, another result of the vascular spasm.

ABSORPTION

The question of absorption of lead is of great practical importance. For many years it was a disputed point whether the skin or the intestinal tract was the chief channel of entrance for the lead salts, but now it is conceded that the intestinal mucosa, including that of the mouth, plays by far the most important part. The English have of late laid great stress on the inhalation of dust as a cause of lead-poisoning, and Goadby reported to the Brussels Congress the result of studies on animals showing that lead could be demonstrated in the lung capillaries of cats which had breathed red and white lead dust. German authorities concede the importance of dust but believe that the greater part of that which is breathed into the mouth is swallowed.

As for the skin, it is admitted by all that water-soluble salts of lead, such as the acetate, chlorid and nitrate, may be absorbed through the skin, but that this is slow and requires long exposure. The non-soluble or poorly soluble salts are thought by some to be changed by contact with the fatty acids in the sweat into soluble compounds. It is held by these observers that in summer while the skin is very active it may be an important channel of absorption. On the other hand, Leyman says that skin absorption of non-water-soluble lead compounds has never been proved and he does not believe it of the least importance in industrial poisoning. To this Weyl, Toth, Legge, Oliver and Sommerfeld agree. Edsall thinks skin absorption relatively unimportant.

A large single dose of white or red lead is required to bring on symptoms of intoxication, but as lead is a cumulative poison, very small daily doses may be enough to give rise finally to the severest symptoms. Brouardel says that poisoning may follow the ingestion of no more than 1 mg. daily. It is of course only a question of disturbing the equilibrium between absorption and elimination, so that if the dose is suddenly increased or if there is a check to elimination, storing up of the lead begins.

PROPHYLAXIS

It would not seem logical to close without saying anything on the subject of prevention of lead-poisoning. As far as industrial poisoning goes, preventive measures have been worked out with great care by foreign governments and we have only to avail ourselves of the fruits of their experience.

The first requisite is the abolition of dust. Where this is impossible, and unfortunately American methods are much dustier than European, the workman must be protected by a respirator, although it should be remembered that no respirator is really an efficient shield against dust. Men obliged to work in lead dust should be given short hours, for fatigue is one of the strongest predisposing causes of lead-poisoning. Another necessary regulation concerns food. No man should be allowed to begin work fasting. Ample washing and bathing facilities and ample time to use them must be provided, and the men must be obliged to make use of them. If this is done, if dust is abolished and the men not allowed to eat lead[4] or carry it home on their persons, they can work in it with fairly little risk. I saw white lead workers in English and German factories very badly smeared with the lead while at work, yet the records showed no cases of poisoning.

Another necessary part of prevention, one most necessary in America, is the elimination of the casual shifting labor. We found in our study of the lead trades in Illinois that many newly arrived non-English-speaking Slavs, Italians and Greeks were engaged in the more dangerous processes of the lead industries and that they had little idea of the danger to which they were exposed, still less of how to guard against it. When such a man develops symptoms of acute plumbism he leaves his work and another ignorant immigrant takes his place, so that there is a constant procession of untrained men in and out of the lead trades. This condition is notoriously bad. In Germany statistics have shown that the amount of lead-poisoning in the white lead industry is in direct proportion to the number of casual laborers employed, and Oliver makes the same statement for England.

The regular medical inspection which is required by law in most foreign countries makes it possible to detect and remove susceptible workers and to abort a threatened attack of colic. There are factories in Illinois in which this feature has been voluntarily introduced by the employers and the bill now pending before the legislature will make it compulsory.

Legislation to regulate the poisonous trades is much needed in every state, but the first logical step toward it is a study of the conditions in that state, a task which naturally belongs to us physicians.

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THE VALUE OF ANIMAL EXPERIMENTATION AS ILLUSTRATED BY RECENT ADVANCES IN THE STUDY OF SYPHILIS *

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I. INTRODUCTION

No one who is alive to the nature of physical pain or aware of the charm of the domestic animals could fail to sympathize with an inquiry into the warrant for animal experiments. It has always seemed odd, it is true, that this critical demand should not only begin with, but often single out for its entire attention, the one human activity involving animal sacrifice which has for its aim the relief of human distress; and that the good souls who become so concerned over one etherized dog, can regard with indifference the packing industry—with its wholesale slaughter to appease appetite; or the fur industry—with its reckless massacres to satisfy vanity; or the fisheries—consigning myriads of helpless beings to slow death by drowning in the air.

Nevertheless, those who are responsible for deliberate experiments on animals recognize the request for its grounds of justification, as a perfectly reasonable one. If the discussion is one in which facts may be offered as evidence, it ought to be a simple matter to determine whether or not the achievements of the experimental method justify its continuance. The history of the subject is an open book; and in commending it to the honest inquirer, medicine need speak in no apologetic tone. Abundant facts for a final decision of the question would come to light through a study of bacteriology and surgical asepsis—a whole science based on experimentation; or of the acute diseases for which specific cures have been determined (malaria, diphtheria, cerebrospinal meningitis); or of the plagues which may be absolutely prevented by hygienic and therapeutic measures (malaria, diphtheria, yellow fever, small-pox, rabies, tetanus); or of the hospital plagues which aseptic technic has almost abolished (erysipelas, blood-poisoning, hospital gangrene); or of the developments which have made every portion of the body accessible to surgery; or of the triumphs of obstetrics, which have reduced the appalling dangers of childbed fever to an almost negligible minimum. Even then only the most striking conquests of medicine would have been considered; and their significance would not have been even approximately grasped by those unfamiliar with the difficulties encountered by medicine at every step forward.

Nowhere, however, can the value of animal experimentation be so satisfactorily tested as in a study of the history of syphilis.

II. THE SOCIAL IMPORTANCE OF SYPHILIS

A just estimate of the value of animal experimentation in the development of the knowledge of syphilis is of vital interest because of the importance of the disease in the community. This is an importance usually overlooked by the public, whose interest is attracted by the more deadly plagues. Yet it is well within the limits of conservatism to say—so wide-spread is the disease, so calamitous and far-reaching are its effects—that none surpasses it, and few equal it in hygienic importance. The attitude of the public toward experimentation undertaken to extend our knowledge of this disease is then, obviously, by no means a matter of indifference.

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[4] In many Illinois factories it is customary for foremen to encourage the men to chew tobacco, under the impression that the expectoration clears the mouth of lead dust. In Europe and England tobacco chewing in lead works is forbidden by law, for the sanitarians hold that lead is carried into the mouth by a plug of tobacco which has been lying in lead-smeared clothes and is handled with lead-smeared fingers.

* Editor's Note: This is Pamphlet 20 in the Defense of Research series. A list will be sent on request.

Wide-spread as the disease undoubtedly is, we have no means of determining its exact extent with accuracy; so many cases go unreported, and so many of the late effects of the disease unrecognized, that all our estimates are underestimates. Yet even so, the figures are sufficiently striking. LeNoir, after a study of nine years, reported at the International Congress in Brussels that between 13 per cent. and 15 per cent. of the male adults of Paris were syphilitic; in other words, that in this city alone, and considering only the male sex, there were 125,000 cases of the disease. These figures were confirmed by Fournier;[1] yet they by no means give even an approximate idea of the extent of the disease, for they take no adequate account of the ravages of late hereditary and parasyphilitic processes.

Syphilis in its acute stages is not a frequent cause of death; and examination of mortality statistics would, therefore, hardly be expected to demonstrate the extent of its ravages — as it might be expected to do, for instance, in the case of typhoid fever. Yet some idea of its spread and significance may be obtained by a consideration of the attitude of insurance toward it. Runeberg[2] found that, including certain apoplexies, probably syphilitic in origin, the mortality from the disease was about 15 per cent. — the total being second only to that of tuberculosis which caused 21 per cent. of the deaths. These figures, which may be somewhat higher than other statistics would justify, assume added importance when it is remembered that they represent the facts existing among the insured, that is to say, the most vigorous portion of the population. The damage done by the disease consists largely in its lowering the standard of average health, paving the way for other diseases and possibly laying the foundation for mental degeneration and alienation. The extent of these secondary effects can only be estimated. Most insurance companies require that four or five years shall have elapsed after the disappearance of the last symptoms of the disease; and no applicant who has had syphilis is given a policy which will keep him on the company's books after his fifty-fifth year. Greene[3] goes even further, and firmly believes insurance at ordinary rates (even after an interval of five years) to be an error. Under no circumstances would he advise a straight life policy to be issued to a man who has a syphilitic history.

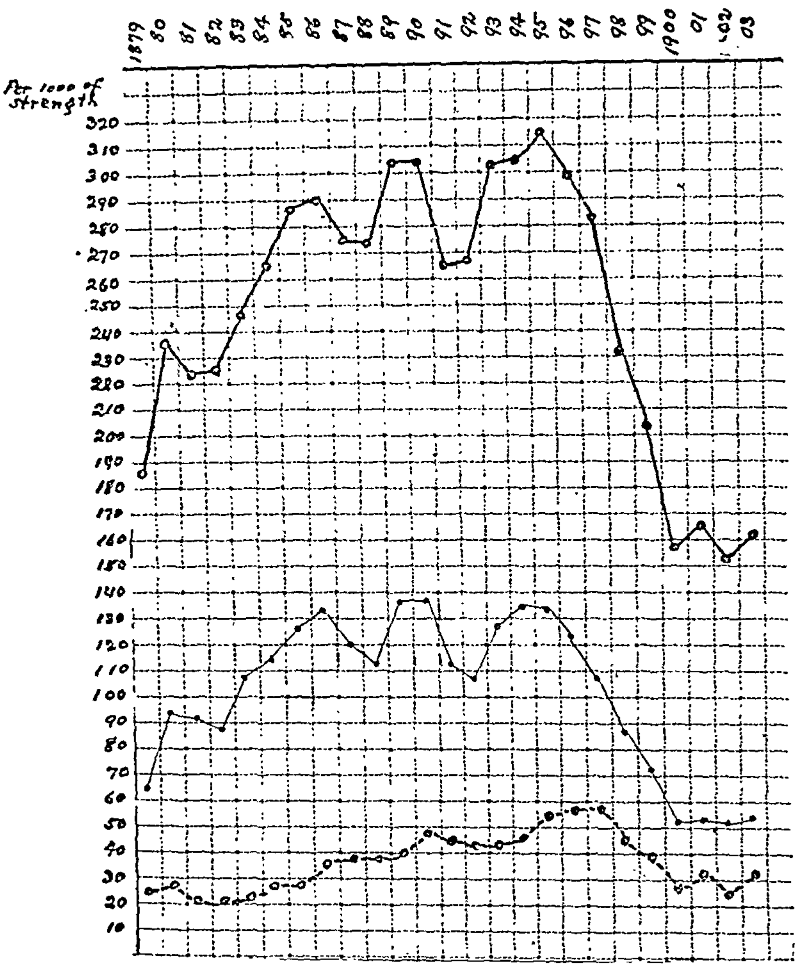
III. SYPHILIS IN THE ARMY

Consider the state of affairs in national organizations in which men are under constant discipline and something like accurate statistics may be obtained. Table 1 represents the admission-rate per 1,000 of strength for syphilis among the British troops in India.

TABLE 1.—Syphilis Among British Troops in India per 1,000 of Admissions

Year.	Primary Syphilis, Inc. Soft Chancre.*	Secondary Syphilis.
1887	142.1	29.4
1888	142.1	32.4
1889	225.1	51.2
1890	220.7	66.3
1893	213.6	61.6
1894	248.1	74.6
1895	239.0	84.9
1896	226.4	97.7
1897	201.7	101.9

*It must be observed that the figures in this column include certain non-syphilitic venereal lesions. The above table is from French: Syphilis in the Army.



Chart, taken from French: Syphilis in the Army, Chart III, Appendix III. The upper, heavy line represents the incidence of all venereal disease; the middle, fine line represents the incidence of primary venereal sores; the lower, dotted line represents the incidence of secondary syphilis.

It is the study of such figures as these which leads experts like Sir Alfred Keogh[4] to write:

> It may be stated without fear of contradiction, that there is no disease, with the possible exception of malaria, that has so important an influence on the efficiency of an army or navy as syphilis. Other diseases doubtless are more deadly and consequently attract more attention; no other is so lasting in its effects, or so persistent in its attack on the bodily strength of the man who has once acquired it. A soldier gets enteric fever and either dies or recovers. Out of a hundred such, it may safely be prophesied that eighty will survive, and of these seventy, at least, be not only none the worse for their experience, but eventually all the more efficient for field ser-

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[1] Fournier: Treatment and Prophylaxis of Syphilis, Marshall's translation, edition 1906, Part II, p. 157.

[2] Osler and Churchman: Chapter on Syphilis, Osler's Modern Medicine, iii, 495.

[3] Greene: Examination for Life-Insurance, p. 118.

[4] Keogh: Introduction to D'Arcy Power and Murphy's System of Syphilis, vol. vi.

vice in consequence of it. . . On the other hand, thirty men get syphilis, and not one of these can ever be considered the man he was before.

With this expert opinion in mind, a glance at the accompanying chart will convince any one of the tremendously crippling power of syphilis in an army. It represents the facts for the British army at home and abroad.

These statistics may be supplemented by two further tables, showing the incidence of syphilis in the armies of Great Britain and the United States.

TABLE 2.—THE INCIDENCE OF SYPHILIS IN THE BRITISH ARMY AT HOME AND ABROAD *

Year.	Strength.	Admissions for Syphilis.	Admissions Per 1,000 of Strength.
1894	203,469	27,436	145.01
1895	200,681	28,081	140.41
1903	282,182	12,668	52.31
1904	244,425	9,219	37.72
1905	240,075	7,039	29.32
1906	230,128	5,958	25.89
1907	217,844	5,033	23.11
1908	215,647	4,137	19.19

*The slight discrepancies between figures in this table and those in the previous chart are apparently due to the fact that in the chart a certain small number of non-luetic lesions are included under "primary venereal sores." Tables 2 and 3 are from D'Arcy Power and Murphy: System of Syphilis, Volume VI.

TABLE 3.—THE OCCURRENCE OF SYPHILIS IN THE ARMY OF THE UNITED STATES

Year.	Strength.	Admissions for Syphilis.	Admissions Per 1,000 of Strength.
1903	71,679	1,676	23.36
1904	59,671	1,525	25.56
1905	55,619	1,953	35.11
1906	53,573	1,869	34.89
1907	53,249	1,534	28.80
1908	50,705	1,436	28.32
1909	62,263	1,592	25.57

Syphilis is thus seen to be one of the most important causes of military inefficiency, even under the best conditions of medical supervision. Given the least leeway it may break out to an appalling extent, as it did among the British troops in the Peninsula, who christened it the "Black Lion of Portugal."[5]

IV. THE SERIOUS NATURE OF SYPHILIS

The wide incidence of syphilis is, then, sufficiently evident. But the great menace of the disease, not only to the two arms of the national defence, but to the health —even to the existence—of the nation as a whole, can be made plain only by a consideration of the calamitous nature of its clinical manifestations.

1. *Danger to the Individual.*—The dangers of the disease to the afflicted individual himself are perhaps roughly appreciated, though it is doubtful if the serious handicap to work, which the compromising and disagreeable secondary symptoms cause, is sufficiently understood. What is certain is that the laity and a majority of physicians wholly fail to appreciate the grave and often fatal nature of the tertiary manifestations. These are particularly pathetic, because they may appear in the prime of life, years after the initial lesion has been forgotten as a thing of the past; and may absolutely incapacitate an otherwise healthy man, who has become involved in the responsibilities of a husband and father. Nothing is more distressing than the sinister predilection of tertiary syphilis for the nervous system. Of 5,749 syphilitic patients studied by Fournier,[6] 758 developed syphilis of the brain, and 1,099 others syphilis of the cord and nerves. That is to say, nearly one out of every three of the patients exhibited syphilis of the nervous system. And if to the multiform manifestations of the disease in its active stage be added the parasyphilitic phenomena — serious, incapacitating and as yet not amenable to treatment — some faint idea may be gained of the far-reaching effect of the disease on the individual.

2. *Danger to the Family.*—But it is as a menace to the family that this disease appears most formidable. No catastrophe can be more disastrous than its spread by the marital relation; no spectacle more dreadful than its transmission to innocent children.

It is the wife, of course, who is most often—though not *always*—innocently infected; and when this occurs, disasters of many kinds follow. The woman herself is submitted to the discomfort, the risk and the degradation of syphilis; and no consequence of the disease can be more distressing. Nor is this occurrence a rare one. Those who regard syphilis as the peculiar property of the underworld, and eye its victims with suspicion, would be surprised at the facts brought out by Fournier[6] who, in a study of 100 syphilitic women, found one in every five to have been innocently infected by her lawful husband. Such a woman must suffer not only in her own body; she must expose her children to the most serious form of syphilitic heredity—mixed heredity. It is only natural that such a train of affairs once started often ends in the dissolution of the family. Even if actual divorce does not ensue, the family ties fail to stand the test; affection and respect die; and we have the melancholy spectacle of a house divided against itself. Moreover, not infrequently, economic ruin ensues through incapacitation of the head of the family and the household becomes a public burden.

3. *Danger to Posterity.*—But this foul disease appears most foul in its dastardly attacks on the second and third generations; and all other features fade beside its importance in heredity. Indeed, the need of protecting innocent children from syphilitic infection is the complete answer to those who object to the removal of the consequences of syphilis as inciting to vice.

An infant mortality astonishingly high is what the disease produces. In many instances this amounts to a complete annihilation of posterity. Ninety women studied by Fournier—all seen in private practice, all of good constitution and surrounded by a favorable environment of hygiene and wealth—became pregnant during the first year of the disease ("the year of terror"). Fifty of these women aborted, thirty-eight infants died soon after birth, and only two children survived—a mortality of 97.7 per cent.! Another study included 200 men who had married while syphilitic, but who failed to contaminate their wives. Four hundred and three pregnancies for which these men were responsible resulted in 288 living children and 115 still-births, abortions and early deaths. Instances of excessive infantile mortality could be indefinitely multiplied. Ribemont-Dessaignes, for instance, reports a woman who contracted syphilis from her husband; she became pregnant nineteen times, had five still-births and gave birth to fourteen children, every one of whom died under 6 months of age. "A child," writes Fournier, "conceived by a woman in the course of recent syphilis is almost certainly condemned to death."

But to this dreadful indictment must be added the woful heritage which syphilitic parents bequeath to the children who do manage to survive. Fragile infants—a prey to every infection; monsters; pathetic and wizened mannikins; idiots; normal children, condemned to a late syphilitic heredity at the second dentition or at puberty—this is the spawn of syphilis. Nor does the trail of the beast stop here; the heritage which these unfortunates receive they pass on to their descendants; and the effects of the disease in heredity may be traced through three generations (Gilbert, Caubert, Étienne). "To cleanse the brothel," writes Fournier, "is not only to protect those who frequent it; it is also to protect the family hearth, the honest woman, the child and the race."

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[5] Ricord: Illustrations of Syphilis. Historical introduction in Belton's Translation.

[6] Practically all that is here written on the dangers of syphilis is taken from Fournier's Treatment and Prophylaxis of Syphilis, Marshall's Translation, ed. 1906, a book that should be familiar to everyone interested in the disease and its relation to society.

That syphilis is a formidable national scourge and that complete knowledge of it is of fundamental hygienic importance may, then, be regarded as established.

V. KNOWLEDGE OF SYPHILIS GAINED BY THE EMPIRICAL METHOD

We have next to inquire into the state of medical knowledge of the disease before animal experimentation began. This will be particularly instructive; because by comparing the knowledge thus slowly acquired, through long years of simple observation, with the rapid advances made in the few years in which the study of the disease by the experimental method has been possible, we get a vivid picture of what productive animal experimentation, now adding daily to our knowledge of syphilis, really means.

It may be said at once that the information about syphilis which medicine was able to accumulate, entirely without the aid of animal experiment, was marvelously complete and accurate. Here is a disease, protean in its manifestations, affecting probably every organ in the body, pursuing a long and insidious course, almost identical in its initial forms with other simple venereal infections and possessing a peculiar power of mimicry, whereby it can simulate minutely the signs and symptoms of numerous other diseases. The conditions could hardly present greater difficulties. Yet, purely by the method of clinical observation, chaos was gradually reduced to order. It is true that this result was many long years achieving. At the time of the European syphilitic pandemic (1494) enormous confusion prevailed as to the nature of the various venereal infections. The difficult problem was gradually solved—but how gradually, may be realized when it is recalled that not until nearly 400 years had elapsed was the question of the dualistic nature of syphilitic and non-syphilitic venereal infections settled.

Quite as interesting as the completeness of the clinician's acquaintance with syphilis in pre-experimental days, was the satisfactory condition of its therapeutics. Working by purely empirical methods and entirely without a rational or an experimental basis, the early physicians found and developed a method of treatment by which the disease could almost always be controlled, and, in a large majority of cases, absolutely cured. The choice of mercury—recommended in syphilis by the Galenists for the most absurd of reasons—happened to be a lucky guess.

In 1836 the administration of potassium iodid in syphilis was recommended by Wallace. This date is an important one in the history of the disease: for it does more than mark the year of a valuable contribution to therapeutics. It marks, too, the end of important advance in our knowledge of the disease; for from that year until the recent successful experimental work on animals, medicine stood practically still so far as syphilis was concerned. A few advances were, of course, made; the debate as to the dual nature of luetic and non-luetic lesions was brought to a conclusion by the French school (Bassereau, Fournier, Clerc, Ricord); certain unrecognized syphilitic lesions were described (arthropathies by Richet, bursopathies by Verneuil); extensive statistical studies were made by Fournier and others; and the importance of parasyphilitic and late hereditary forms was recognized and emphasized. But no really new light was thrown on the disease. Clinical study had about reached the limit of its possibilities.

VI. DEFICIENCIES IN PRE-EXPERIMENTAL KNOWLEDGE OF SYPHILIS

It is essential for one interested in good faith in determining the value of experiments on animals in syphilis to ask whether there was any need that this intimate, and in many respects, satisfactory clinical and therapeutic knowledge be supplemented by facts which animal experimentation might supply. Was it merely that scientific curiosity craved satisfaction? Or were there real hygienic needs to be met, and to be met only by the study of the disease in animals?

That a vital demand for further knowledge existed becomes at once apparent when it is stated that, complete as our knowledge of syphilis was, there were a number of points at which it was replaced by ignorance as complete; and that this ignorance concerned certain fundamental features of the disease.

In the first place, it has often been impossible to make an early diagnosis. The first sign of syphilis (the chancre) usually appears about three weeks after infection has occurred. When it does appear its nature is often so uncertain that further phenomena must be awaited before the prolonged and disagreeable treatment can be instituted. If specific treatment is undertaken immediately, the sore will disappear, secondary symptoms may never present themselves, a positive diagnosis may never be made and the treatment—which, to be effective, must be carried on thoroughly over a period of years—will at first be half-heartedly undertaken and in a short time discontinued. On the other hand, if treatment is not promptly begun, valuable days, even weeks, pass before the disease can be positively recognized and attacked.

In the next place, positive diagnosis in the later stages of the disease is often impossible. Those unfamiliar with the protean manifestations of syphilis have no conception of the difficulty it may present in diagnosis. Even the most experienced physicians are often unable to tell whether a given condition is syphilitic or not.

But a graver deficiency in our knowledge of this disease, is our inability to recognize it in its "latent" forms. In these cases the infection, though still present and likely to break out at any time or to be passed on to others, is not at the moment producing any obvious signs or symptoms. It is this form of the disease which contributes largely to the danger of syphilis among prostitutes; for the existence of latent syphilis, though a real menace to the community, may escape the most careful medical inspection. A syphilitic woman could quite well be the source of widespread infection and yet possess a clean bill of health on the absence of obvious signs.

Moreover, we have never known how long it was necessary to continue treatment before a complete cure was obtained. As our knowledge of the disease advanced, it became clear that a longer and longer duration of treatment was necessary for safety; and it is now rather arbitrarily estimated at about three years. But this is only an estimate. And how unsafe it is to proceed, in this matter, on an estimate becomes apparent when the importance of the disease to marriage is borne in mind.

All physicians are agreed that no syphilitic should marry until the disease has been positively cured; but they have no way of telling just when cure has been effected; and have, therefore, always lacked the necessary data for intelligent advice to their patients.

Finally, so long as the cause of the disease was unknown and the possibility of its study by the methods of reproduction in animals excluded, advances in the knowledge of the disease—such as these methods had made possible in the case, for example, of suppuration—were quite out of the question.

VII. WHAT EXPERIMENTAL RESEARCH HAS ACHIEVED IN THE CASE OF SYPHILIS

1. *Successful Reproduction in Animals.*—Previous to 1903 animal experimentation practically did not exist so far as syphilis is concerned. So many of the attempts to transmit the disease to animals had been unsuccessful, and so difficult was it to control the supposedly successful results, that the general attitude toward the subject was one of apathy. Certain observers had indeed reported successful transmission to animals. Auzias-Turenne,[7] for example, claimed to have inoculated the cat; LeGros and Lancereaux,[8] the pig; and an occasional success had been obtained in monkeys (Klebs,[9] Martineau and Hamonic,[10] Nicolle[11] and others). But the successes had been only occasional and could not be substantiated by independent observers.

In 1903, however, the first communication of Metchnikoff and Roux[12] was published by the Pasteur Institute. The authors reported the undoubtedly successful transmission of syphilis to a two-year-old female chimpanzee; and the equally successful inoculation of a male chimpanzee with material taken from the first animal. Several bonnet monkeys (*M. sinicus*) were also successfully inoculated; but certain species (e. g., the mandrils) seemed to be insusceptible. These experiments were promptly repeated by Lassar[13] and the results confirmed.

The successful inoculation of animals immediately opened up a dozen avenues of research, and a second communication soon appeared from the same workers.[14] Here, continuation of the inoculation experiments was reported; and it was apparently demonstrated that monkeys might be divided into two groups, according to their susceptibility to syphilis — the anthropoids approaching the lower races of man in susceptibility, the mandrils and maimons exhibiting a complete natural immunity to the disease. The idea was therefore confirmed, which had previously been advanced by others, that failure to use susceptible animals probably explained much of the inconsistency of the experimental work done before this time. Additional confirmation of this work soon came from Neisser,[15] who reported successful inoculations of chimpanzees, orang-outangs and a gibbon. In 1904, Metchnikoff and Roux's third communication[16] appeared. Here the particularly interesting point was made that the syphilitic virus would not pass through a Berkefeld filter. Klingmüller and Baermann[17] had previously made the same assertion *after having inoculated themselves with human syphilitic material* which had been passed through a Berkefeld filter. Finally, the two workers at the Pasteur Institute published their conviction, in a fourth communication,[18] that the chimpanzee, by reason of its susceptibility to syphilis and the similarity of the symptoms produced with those seen in human beings, was the most suitable animal for experimental purposes. More important still, they were able to confirm the work of Schaudinn, which had meanwhile appeared, by finding the *Spirochæta pallida*[19] in 74 per cent. of thirty-one syphilitic monkeys. Thus did the two lines of research promptly cross.

Experimental work on animals other than monkeys was never very conclusive until Bertarelli[20] reported the successful inoculation of the cornea in rabbits. A similar result had been obtained by Haensell;[21] and Bertarelli's observations were promptly confirmed by Hoffmann and Brüning,[22] by Scherber,[23] and by Greef and Clausen.[24]

Thus, in a few short years the technic of animal experimentation—so fruitful in other fields—has been developed for syphilis. It is impossible to exaggerate the importance of this advance, which touches the whole dreary prospect of syphilis with hope. The work of Metchnikoff and Roux on susceptibility and immunity, of Finger and Landsteiner[25] on the infectiousness of tertiary lesions and of semen, of Neisser on the syphilitic testicle: these are a few instances of the way in which new avenues of progress were immediately opened up and promptly traveled by eager scientists. The prevention of syphilis, which previously seemed an utopian dream, became—once the transmission of the disease to animals was assured—a reasonable, if remote, hope; and there was not a single dark crevice into which this discovery did not throw encouraging light.

2. *Discovery of the Cause of Syphilis.*—The year 1905 marks the beginning of a new era in the history of syphilis; for a publication which then appeared put an end to the long and weary search for the cause of the disease. The idea of a living contagium in syphilis had long been held, and the tale of the search for it is one to make the judicious grieve. But a new light broke with the appearance of the paper of Schaudinn and Hoffmann.[26] It was an epoch-making report, but it was a model of calmness. Despite the importance of the observations, the facts were cautiously stated and a discussion of their significance postponed until the accumulation of further data. The authors had found, they said, a characteristic, nonrefractile, delicate organism, from 4 to 14 microns in length, pointed at both ends, with numerous clear, tight, cork-screw-like spiral curves. It was readily distinguishable from other bacterial and protozoan forms, and had been found in numerous primary and secondary syphilitic lesions. Moreover, Metchnikoff had been able to demonstrate its presence in the primary lesion of an experimentally inoculated ape.

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[7] Auzias-Turenne: La syphilisation, 1878, p. 422.

[8] Legros and Lancereaux: In Dictionnaire Encyclopédique des Sciences Médicales, 1884, xiv, 498.

[9] Klebs: Arch. f. exper. Path, 1879, x, 161.

[10] Martineau and Hamonic: Bull. de l'Acad. de med., 1882, 1007; Soc. med. des hôp., 1883; Rev. Clin. d' androl. et de gynecol., 1903, p. 225.

[11] Nicolle: Not published; quoted by Metchnikoff and Roux in their first communication.

[12] Metchnikoff and Roux: Ann. de l'Inst. Pasteur, 1903, xvii, No. 12.

[13] Lassar: Berl. klin. Wchnschr., 1903, No. 52, p. 1; 1904, p. 801.

[14] Metchnikoff and Roux. Ann. de l'Inst. Pasteur, 1904, xviii, No. 1.

[15] Neisser: Deutsch. med. Wchnschr., 1904, pp. 1369, 1431.

[16] Metchnikoff and Roux: Ann. de l'Inst. Pasteur, 1904, xviii, 657

[17] Klingmüller and Baermann: Deutsch. med. Wchnschr., 1904, p. 766.

[18] Metchnikoff and Roux: Ann. de l'Inst. Pasteur, 1905, xix, 673.

[19] There is some disagreement as to the proper name for this organism; *Treponema pallidum* is probably more correct, but *Spirochæta* is used here as being more familiar.

[20] Bertarelli: Centralbl. f. Bakt., Orig. 1, 1906, xli, 320.

[21] Haensell: Arch. f. Ophth., 1881-3, xxvii, 93.

[22] Hoffmann and Brüning: Deutsch. med. Wchnschr., 1907, No. 14, p. 553.

[23] Scherber: Wien. med. Wchnschr., 1906, p. 726.

[24] Greef and Clausen: Deutsch. med. Wchnschr., 1906, p. 1454.

[25] Finger and Landsteiner: Arch. f. Dermatol. u. Syph., 1906, lxxviii, 385; lxxxi, 146.

[26] Schaudinn and Hoffmann: Arb. a. d. k. Gsndhtsamte, xxii, No. 2, p. 527; Deutsche. med. Wchnschr., 1905, No. 18, p. 711.

This paper immediately awakened a new interest in the subject throughout the world; and confirmatory evidence soon accumulated in enormous amounts.[27] Before long, what had at first been cautiously accepted as a probability bordering on certainty, became a certainty; the *Spirochæta pallida* of Schaudinn and Hoffmann withstood all efforts to disprove its etiologic relation to syphilis; and the long and weary search for the cause of the disease was at an end.

3. *Discovery of a Diagnostic Reaction Specific for Syphilis.*—Hardly less important than the discovery of the cause of syphilis, was the demonstration of a biologic reaction, the presence of which is absolute proof of the existence of the disease, even in the absence of signs or symptoms.[28] The very great value of such a reaction in cases of doubtful diagnosis, and particularly in latent syphilis, needs only to be mentioned to be appreciated. The reaction was discovered almost simultaneously by Wassermann, Neisser and Bruck,[29] and by Detre,[30] working independently, but with practically the same technic. The names of Bordet and Gengou[31] must, however, be borne in mind in this connection. These two pioneer observers (who also recognized the *Spirochæta pallida* before Schaudinn and just missed appreciating its significance) were the first to describe the general phenomenon of complement fixation (or deviation), of which the Wassermann reaction for syphilis is a modified example. *This highly theoretical investigation and the immensely practical application of it by Wassermann depended on animal experimentation at every step.*

The Wassermann reaction depends on the capacity which the serum of syphilitic patients has to fix complement in the presence of extracts of syphilitic tissue, or certain other alcoholic extracts. This fixation of complement is tested for by the use of a so-called hemolytic system, which consists of red blood-cells, and a serum capable, in the presence of complement, of hemolyzing them. It is impossible to define the reaction without the use of highly technical terms which would themselves require extensive definition. Here, one may simply state how the test is made. Extract of known syphilitic material and the blood-serum of the patient to be tested are mixed in a test-tube. Fresh guinea-pig serum is then added and the mixture incubated to allow complement-fixation to occur. The hemolytic system, which requires complement for the completion of the hemolysis, is next added. If the serum to be tested is not syphilitic, complement is not bound and hence is available for the use of the hemolytic system; hemolysis, therefore, proceeds, the red blood-corpuscles continue to be destroyed, the mixture becomes red in color and the test is negative. If, on the other hand, the serum is syphilitic, complement is bound, hemolysis inhibited, the red blood-cells not destroyed, the mixture not reddened, and the test is positive.

This test, while not absolutely constant, has turned out to be one of the most valuable of the biologic reactions. When the test is negative, syphilis is not excluded; but when positive, a diagnosis of syphilis is to be made with almost absolute certainty. It has already shown itself even more reliable than the Widal reaction; and no one familiar with typhoid fever is ignorant of the very great value of this diagnostic test.

4. *Discovery of a Specific Drug for Syphilis.*—It would be difficult to find in the history of medicine a more interesting and instructive story than the account of the work which led up to the discovery of salvarsan (606). When Ehrlich began his work years ago, syphilis was the last thing in his mind. He was interested at that time in the idea which possessed him that every living cell has a chemical affinity for some particular substance. This property of mutual attraction he called chemotropism; and in experimenting with dyestuffs he came upon a very pretty example of it in the selective affinity which methylene-blue exhibits for cells of the nervous system. If, then, such a specific affinity did exist, it seemed quite probable that it might also exist between certain drugs and certain parasites; and after some years of further experimentation Ehrlich was able to investigate this point. He believed that for each specific parasite, a specific curative drug could and would be found.[32] Because of the sleeping-sickness epidemic in Africa and because the disease is easily transferable to mice, Ehrlich began with a study of this affection. He succeeded, in connection with Weinberg, in producing a new dyestuff (trypan-red) which caused the organisms to disappear from experimentally inoculated mice in one injection. It was soon shown that parasites rapidly acquired a tolerance for such drugs and that, in order permanently to cure a parasitic disease, it was necessary to destroy every single parasite in the shortest possible time. Ehrlich's very difficult problem then became to produce a substance which was so specific for given parasites as completely to destroy them at one injection, but which was at the same time harmless to the infected animal itself. Starting, then, from atoxyl—an arsenic compound known to be efficacious in trypanosomiasis, but dangerous to the animal—Ehrlich proceeded to the solution of the problem. The task was one of colossal dimensions. Hundreds of substances had to be synthetized and then tested for toxicity on various species of animals. Of the large number of drugs made and tried, only about ten stood the test.

At about this stage in the work it was shown by Bertarelli and others, that syphilis could be transferred to rabbits; and Ehrlich turned his attention to the diseases caused by the spirilla and spironema: syphilis, relapsing fever and chicken spirillosis. In a short time a drug was produced—No. 606 in the series—which Hata found would definitely cure chicken spirillosis in a small, safe, dose, would completely sterilize a mouse infected with relapsing fever, and—in a dose one seventh of the *dosis tolerata*—was sufficient to cause the *Spirochæta pallida* to disappear from a syphilized rabbit.[33] Ehrlich repeated the experiments; the drug was again tested on dogs, *and on two of Professor Alt's assistants, who volunteered to demonstrate in this way the safety of the drug for*

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[27] It is impossible to indicate even the more important articles. The early literature on the *Spirochæta pallida* is collected in a Leipsic thesis by Julius Glass, December, 1905; and by Herxheimer, in Lubarsch and Ostertag's Ergebnisse der Alleg. Path., Jahrgang, xi, Abteil. 1. The article by F. P. Gay in Internat. Clin., 1907, iii, series 17, p. 199, is accompanied by a useful bibliography.

[28] The reaction has been observed also in leprosy and in scarlet fever; but for practical purposes these exceptions do not impair its diagnostic value.

[29] Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr., 1906, xxxii, 745; Wassermann, Neisser, Bruck and Shucht: Ztschr. f. Hyg. u. Infektionskr., 1906, lv, 451; Wassermann: Wien. klin. Wchnschr., 1906, xxi, 745; Wassermann and Meier: Deutsch. med. Wchnschr., 1907, xxxiii, 1287.

[30] Detre: Wien. klin. Wchnschr., 1906, xix, 619; Detre and Brezovski: Wien. klin. Wchnschr., 1908, xxi, 1700.

[31] Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, xv, 289; Bordet: Bull. de l'Acad. royale de Belgique, 1906, xx, 454; Ztschr. f. Immunitäts-Forsch., 1909, Referate I, 1. Bordet and Gay: Ann. de l'Inst. Pasteur, 1906, xx, 467.

[32] Marks, L. H.: Ehrlich's Biochemical Theory, Its Conception and Application, THE JOURNAL A. M. A., Dec 3, 1910, p. 1974.

[33] The chemical name of this preparation is p.p.—dioxy=m.m.—diamido-arseno-benzol. It is used in the form of hydrochlorid of the sodium salt, which has the following structural formula:

human beings. It was then tried on patients. In order to make the test of the drug on human beings as convincing as possible, Ehrlich distributed 20,000 doses to clinicians of standing throughout the world, on the condition that certain rigid restrictions in administration be observed, and that the patients be kept in hospitals several days for observation. On the results thus obtained, Ehrlich will base his conclusions as to the value of the drug in the treatment of human syphilis. Those who have attempted to assemble, one at a time, 20,000 objects of any kind—say something as readily accessible as a canceled two-cent stamp—will appreciate something of the magnitude of this task, when they remember that the preparation of the dose of the drug, the necessary examination and subsequent observation of the patient, the preparation of the records, the critical examination of the results—are proceedings which represent hours of work for each individual case; and that this colossal task is merely the final stage in a research which has been going on for years. This point is worth calling to the attention of those who are accustomed to regard animal experimentation as child's play, undertaken at odd moments, by brutes who love to see animals squirm.

This account of the work of Ehrlich is the briefest possible sketch.[34] It conveys no idea whatever of the difficulty of the problems attacked, or of the genius displayed in overcoming them. It says nothing of several important contributions made to the theory of science, and to the practice of medicine, by the way. One of the earliest points brought out, for example, was a demonstration of the true chemical nature of atoxyl. Again, trypan-red—though used by Ehrlich against sleeping-sickness—was shown by Nuttall to be also effective in the widely distributed Texas fever of cattle. Salvarsan (606), sent by Ehrlich to Iversen in Russia, proved to be of very great value in the treatment of relapsing fever.

Of the exact value of the drug in syphilis it is too early to speak; the evidence is not yet all collected and has not been made public. Moreover, it is recognized as quite possible that a drug so powerful may have important deleterious effects; and until this point is cleared up by experience, any judgment as to its final place in medicine is ill-advised. It is, however, an open secret that astonishing results have been obtained. From the clinics of Wechselmann and many others, reports have already appeared which make it seem certain that—even if the final results fail to fulfil the early hopes—a contribution of the very first importance has been made to the therapeutics of syphilis.

But Ehrlich's work has been more than a contribution of this sort. He has founded a new science of chemotherapy, and has given a new vitality to pharmacology—hitherto interested largely in the toxic effects of drugs on normal animals. He prophesies a new era to be brought about by the interest of chemists like Baumann and Emil Fischer, and clinicians like von Mehring in practical therapeutics. "On the basis of years of experience in the laboratory," he writes, "I indeed believe I am justified in expressing the hope that, by carefully following the path [of chemotherapy] which I have sketched, a sure advance will be made."[35] These are the cautious and serious words of a serious man, whose talent and achievement place him in the very first rank. It is the opinions of such men which should be decisive in these matters.

This, then, is what animal experimentation has done for syphilis. In a period of about seven years the cause of the disease has been established, a specific reaction for its detection has been discovered, its successful transmission to animals has been accomplished, and a drug of apparently first-rate importance has been advanced for its treatment. Those who make practical achievement the final test of the value of experimental work. could hardly ask for more convincing evidence than these splendid results provide.

VIII. PRACTICAL VALUE OF RECENTLY ACQUIRED KNOWLEDGE OF SYPHILIS

To appreciate, however, the real significance of these advances it is necessary to do something more than merely state them. No one could possibly deny their importance, regarded simply as achievements. But it is conceivable that this might not be regarded as sufficient justification for them. "Do they," it might be asked, "represent merely the triumph of scientific curiosity over great natural obstacles; or have they really made medicine more efficient, by enabling it to deal better with this disease?"

It must, in reply, be at once stated, and stated with great emphasis, that there is not a single weak point in the medical attack on syphilis which recent animal experimentation has not strengthened; that complete knowledge has in many places replaced complete ignorance; that diagnosis has been made easy where it was previously difficult, and possible where it was previously out of the question; that the efficiency of treatment has been tremendously increased; and that the way has been indicated for the solution of many, if not all, of the difficulties which still remain.

In order to justify these extreme claims let me take up, in an itemized way, the deficiencies in our previous knowledge, which have already been indicated, and apply to them the facts which animal experimentation has supplied.

1. *Possibility of Early Diagnosis.*—An early diagnosis of syphilis is now possible. On the appearance of the initial lesion, we are able—by finding the recently discovered *Spirochæta pallida*—to make a positive diagnosis of the disease. The confusion with non-syphilitic genital lesions has become a thing of the past and it is no longer necessary to waste valuable time awaiting the appearance of secondary symptoms before treatment is begun.

2. *Increased Possibility of Positive Diagnosis.*—A positive diagnosis is now possible in many cases which previously went unrecognized. The Wassermann reaction and the demonstration of the *Spirochæta pallida* are of great importance in making the sometimes difficult differential diagnosis between syphilis and the host of affections which may simulate it—a diagnosis which, without these aids, was often simply not made.

3. *Recognition of Latent Syphilis.*—It is now possible, in a large majority of cases, to recognize "latent" syphilis. Heretofore, unless symptoms recognized as definitely syphilitic were present, we had no means of detecting the disease. Now, it is possible to say not only that a man has syphilis, but (in a fairly large proportion of cases) that he has had it. This is an advance of the very greatest importance. It enables us to recognize the syphilitic nature of many affections which might otherwise be badly treated. And it promises to be of value in the solution of the vexed problem of prostitution; for we are now able to tell, with a good deal of exactness, which prostitutes are infectious, and efficient hygienic control becomes a possibility. Indeed, the means for

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[34] Marks, L. H.: Paul Ehrlich; the Man and His Work, McClure's Magazine, December, 1910; Schweitzer: Ehrlich's Chemotherapy—a New Science, Science, Dec. 9, 1910.

[35] Ehrlich: Ber. d. deutsch. chem. Gesellsch., xlii, No. 1.

the detection of the disease in the absence of symptoms, the means for its positive diagnosis, and the means for its cure, having been provided, it is now possible for the community—if it choose to make intelligent use of the knowledge—to rid prostitution of syphilis. And this means, in time, the abolition of the disease from the face of the earth. If this sounds like a utopian dream, one has but to recall small-pox, which once raged everywhere, but which medicine—with slender means at her disposal—finally overcame. Sufficient knowledge is now at hand to enable us to recognize and control the main foci of infection; proper use of this knowledge will eradicate syphilis, even though prostitution itself continue, as it quite well may, to flourish.

4. *Possibility of Ascertaining a Definite Cure.*—The time when a syphilitic patient may be regarded as cured, and not only free from the disease himself, but incapable of transmitting it to others, may now be known with practical exactness. The importance of this fact in relation to the question of marriage is evident. To the syphilitic patient anxious to marry, but equally anxious not to confer on his future wife and children the dangers of the disease, medicine has heretofore been able to give only halting advice. After three or four years of treatment she has allowed him to marry, but always with some misgivings. Now, she will certainly forbid his marriage if his Wassermann reaction is positive, no matter how long he has undergone treatment, or how complete is his freedom from symptoms; and she will allow the marriage confidently, if the reaction becomes negative and remains so without treatment. Moreover, if the state ever finds itself prepared to exercise an enlightened control over the physically unfit to prevent them from passing their burdens on to posterity, medicine stands ready to indicate to the state just what, so far as syphilis is concerned, constitutes unfitness.

5. *Proof of Infectiousness of the Tertiary Lesion.*—Not least of the contributions of experimentation has been the proof of the infectious nature of the tertiary lesions. This fact has only to be stated for its importance to be understood.

6. *Increased Activity with Regard to Syphilis.*—Finally, now that the cause of syphilis is known and methods for its study in animals are at hand, the lethargy of preexperimental days, in regard to syphilis, disappears, and is replaced by enthusiastic and hopeful activity. For it must be remembered that the study of syphilis by the use of animals is yet in its infancy; that only the bare beginnings have been made. The recently acquired knowledge of the disease is still in a fluid state; and it is difficult to estimate exactly what the ultimate value of the observations made, will be—as difficult as to prophesy the exact future position of every boat in a fishing fleet, making for harbor with favoring wind and current. Yet, the wind that blows is the wind of progress; the current is the current of hope; and the haven ahead is the harbor of health. Behind, lies the troubled sea of chaos and despair. Anyone who thinks this a mere figure of speech is invited to consider the incalculable value of the achievements of recent experimentations for the host of innocent women, menaced by this disease, and the great army of unborn children, threatened with a syphilitic heritage; and to recall that the loss of animal life involved in the work shrinks to insignificance beside that represented in any meat market you choose to pass, while the amount of animal suffering entailed might easily be duplicated in every one of a thousand fisheries, to whose activities the "humane" societies give never a thought.

IX. SYPHILIS AND ANTIVIVISECTION

The importance of a consideration of syphilis in arriving at any conclusion as to the justification of animal experimentation has, I think, been made sufficiently clear. But a word should be said about the light thrown on one or two of the stock objections to animal experimentation by a consideration of the experimental investigation of syphilis.

It is often asserted that research should be so controlled and limited that only those lines of work could be followed which give reasonable promise of practical result; and that the repetition of experiments solely for the purpose of confirming the work of others, should be made impossible. This sounds like a reasonable suggestion. Yet see how fatal such a policy would have been to the development of the knowledge of syphilis.

The whole remarkable success of Schaudinn came during a research undertaken to confirm the observations of another. Siegel[36] had reported the constant finding of an organism (*Cytorrhyctes luis*) in syphilitic lesions; and the Imperial Board of Health of Berlin appointed Schaudinn—a highly trained protozoölogist—to repeat the work and see if the observations could be substantiated. Siegel's findings were not confirmed, but during the investigation, the real cause of syphilis was unearthed.

Again, who could possibly have prophesied that Ehrlich's early interest in the chemistry of the dyestuffs would lead to contributions to the therapeutics of syphilis? If it was to have any valuable results, one would have expected them in the industrial arts. Yet, starting with chemistry, he then turns his attention to protozoan disease, founds the new science of chemotherapy, hears of the work of Schaudinn and Bertarelli, becomes interested in syphilis and ends by making an important contribution to its therapeutics. One is reminded of the career of Pasteur, who began in physics, with the study of crystallography, was led into an investigation of the wine and silk industries, founded the science of bacteriology and made a contribution to therapeutics of the first importance.

Indeed the work of the various students of syphilis has been so intertwined, and the results of one of so much value to the others, that in an account of any one research most of the prominent names appear and reappear. Schaudinn, Ehrlich, Metchnikoff and Roux, Siegel, Bertarelli—it was the constant familiarity of each of these with the work of the others, and the constant attempts to confirm and advance the results already obtained, that led to the marvelous progress made. Even so remote an event as the discovery of the coal-tars, years before, by Perkins, contributed to the result; for it made not only bacteriology, but also chemotherapy possible.

It is this interdependence of research and the property of discoveries to have the most remote and unexpected value that makes restriction to experimentation, based on the probable importance of its results, unwise. Those who have become familiar with the subject by actual work in the laboratories, feel that to add to the already great difficulties of experimentation, by surrounding it with petty restrictions, would be to reward medicine for her fine achievements by crippling her, to equip her for future tasks by veiling her eyes. For it must be remembered that it is after all to medicine, and not to the "humane" societies, that the public looks for relief from disease: and when your "humane" legislation has forced your scientist into exile if he is to continue his work of enlightenment (this is how Great Britain "encouraged" Lister!), *who is to accept the high* responsibility for increasing efficiency in the treatment of disease demanded by the suffering patients who will continue to crowd the hospitals? Will the "humane" societies, after making it a misdemeanor for a scientist to operate on an etherized dog without running to them for a permit, undertake to furnish us, in some other way than by experimentation, with the sorely needed facts about cancer and other unconquered plagues? Or should this work be entirely entrusted to those who have proved their fitness by their achievements in the study of syphilis?

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[36] Siegel: München. med. Wchnschr., 1905, p. 1321.

It is high time that some protest was made against the cowardly charge that animal experimentation brutalizes men; and time, too, that those who launch it ceased to attain thereby a reputation for high moral sense in the community. The facts in the case are readily accessible; and if the charge is made in good faith, it ought to be backed by a notorious evidence of brutality in the profession which authorizes, and is in sympathy with, this "brutalizing" work. But whatever else physicians, as a class, are, brutal they most decidedly are not. Medicine can point to a group of heroes, not to be surpassed in any profession, who have testified to the sincerity of their scientific zeal by offering their own bodies as material for experiment; and until the opponents of animal investigation can match this, charges of brutality come from them with very bad grace indeed. Moreover, it is a simple fact that the physicians of any community —devoting their lives to the relief of distress—maintain a reputation for interest in others to which the term "brutal" is simply not applicable; and that in communities where experimentation is going on it is to those interested in animal investigation that the profession looks for leadership in its far-sighted campaign for the health and happiness of this and future generations. The reputation of these leaders, so far as brutality is concerned, is above reproach. The high standard of Pasteur, most kind-hearted of men, most active of experimentalists—has been maintained by his successors; and those who, in their righteous indignation, echo the outcry against experimentation on the ground of its brutalizing effect, might better serve the cause of righteousness by an inquiry, among the scientists in their own community, into the truth of this serious accusation.

If, however, this charge—so far from being made in good faith and on the basis of actual instances of brutalization of character by experiment—represents, for all its odor of piety, merely an academic makeshift for the purposes of debate, then one can but marvel at the moral standard of those who, in their concern over animals, permit themselves to make against a profession, busy with intelligent philanthropy, a charge so grave and so unjust.

CONVENIENT TABLE IN THE USE OF TUBERCULINS

GEORGE H. KRESS, M.D.

LOS ANGELES

The revival and wide use of tuberculin in the last few years has led a comparatively large number of makers of biologic products to place the different kinds of tuberculin in most common use on the market. As made by several of these firms, preparations like T. R. and B. E., presumably of the same strength, *really contain a different amount of the tubercle solids in the concentrated solutions.*

SYSTEM OF NUMBERING DILUTIONS OF TUBERCULIN *

No. of Dilutions	Strength Per Cent.	Compartment A		Compartment C		Compartment D		Compartment E		Compartment F	
		Fld. mg. in 1 c.c. conc. sol.	Fld. mg. in 0.1 c.c. conc. sol.	Solid mg. in 1 c.c. if 10 mg. to 1 c.c. conc. sol.	Solid mg. in 0.1 c.c if 10 mg. to 1 c.c. conc. sol.	Solid mg. in 1 c.c. if 5 mg. to 1 c.c. conc. sol.	Solid mg. in 0.1 c.c. if 5 mg. to 1 c.c. conc. sol.	Solid mg. in 1 c.c. if 2 mg. to 1 c.c. conc. sol.	Solid mg. in 0.1 c.c. if 2 mg. to 1 c.c. conc. sol.	Solid mg. in 1 c.c. if 1 mg. in 1 c.c. conc. sol.	Solid mg. in 0.1 c.c. if 1 mg. to 1 c.c. conc. sol.
I (orig.)	100.	1000.	100.	10.	1.	5.	.5	2.	.2	1.	.1
II	10.	100.	10.	1.	.1	.5	.05	.2	.02	.1	.01
III	1.	10.	1.	.1	.01	.05	005	.02	002	.01	.001
IV	.1	1.	.1	.01	.001	.005	.0005	.002	.0002	.001	.0001
V	.01	.1	.01	.001	.0001	.0005	.00005	.0002	.00002	.0001	.00001
VI	.001	.01	.001	.0001	.00001	.00005	.000005	.00002	.000002	.00001	.000001
VII	.0001	.001	.0001	.00001	.000001	.000005	.0000005	.000002	.0000002	.000001	.0000001

* Old Tuberculin contains 1,000 mg. of Old Tuberculin to 1 c.c. Conc. O. T. (Compartment A, 1,000 mg.).

Von Ruck's T. R. contains 10 mg. of tubercle bacilli to 1 c.c. Conc. T. R. (Compartment C, 10 mg.).

Cutter's B. E. contains 5 mg. of dried tubercle bacilli to 1 c.c. Conc. B. E. (Compartment D, 5 mg.).

Cutter's and Mulford's T. R. contain 2 mg. of solid substance to 1 c.c. Conc. T. R. (Compartment E, 2 mg.).

Parke, Davis & Co.'s T. R. and B. E. each contain 1 mg. of tubercle bacilli to 1 c.c. of Conc. T. R. or B. E. (Compartment F, 1 mg.).

Von Ruck's Watery Extract contains 1 mg. of dry solids to 1 c.c. Conc. W. E. (Compartment F, 1 mg.).

In reading reports concerning patients under treatment, therefore, the dosage mentioned may be actually quite different from that which the reader has in mind *from the figures given.* As a rule, these firms also use *different systems of nomenclature in numbering their dilutions.* As a consequence physicians in the West not infrequently have patients referred to them with letters concerning the dosage of tuberculin previously used, the exact meaning of which dosage it is not always easy to understand.

The table above, which I use in dispensary and hospital work, *may be worth printing because,* if desired, they allow notations of the dose to be made in small space on the history cards and allow one at any time to estimate at a glance the exact amount of tubercle solids in milligrams which is contained in the dose of any dilution injected.

Starting with the original or concentrated solution, which in this system of numbering always receives the Roman digit I, the dilutions, made as is the custom, according to the metric system, are carried to as great a degree as is desired, each dilution being ten times stronger than the dilution below it, so that 10/10 of a c.c. of any dilution is equal to 1/10 c.c. of the dilution just above.

When these tables are used, the bottles containing the dilutions are labeled with the Roman numerals I, II, III, IV, etc., and in making notations of dosage on the history cards, this number is used as the denominator. The numerator is an Arabic numeral 1, 2, 3, 4, 5, 6, 7, etc., to represent 1/10, 2/10, 3/10, 4/10, etc., of a c.c. of that particular dilution.

Thus, 3/IV O. T. would mean 3/10 c.c. of dilution IV of old tuberculin, which, as may be readily seen by reference to Compartment A of the table below, implies a content of 3/10 milligrams of old tuberculin. Likewise 3/IV T. R., if made by Parke, Davis and Company (see Compartment F), would mean 3/10,000 mg.; while 3/IV T. R. of Cutter's make (see Compartment E) would mean 3/5,000 mg.; and of Von Ruck's T. R. (see Compartment C) would mean 3/1,000 mg. The name of the maker of the tuberculin is, of course, always mentioned on the history card.

The use of some such system of numbering as this can effect, therefore, a considerable saving of time when tuberculins are used with any frequency, and may also be of convenience to those who have need from time to time to calculate the exact dosage of some tuberculin only occasionally used, or in the more accurate interpretation of dosage figures given by colleagues elsewhere.

240 Bradbury Building.

THE FORMATION AND FUNCTIONS OF HYGIENE COMMITTEES FOR UNIVERSITIES

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The position of a university or any other large educational institution in regard to its students is a peculiar one, involving grave responsibilities of many kinds. Boys and girls are brought from their homes from greater or lesser distances, and perhaps for the first time in their lives are freed from the restraining influences of home life. These students collect in various dormitories or lodging houses and mix together on the campus, in class rooms, and in various assemblages incident to university life. The responsibility of the institution is, therefore, an exceedingly grave one. It takes the place of the parent or guardian to this mass of students. The danger of epidemic diseases, which is always present when numbers of people are brought together, is constantly present. That institution which looks only to the education of the mind through the completion of a fixed course of study falls very far short of its true functions. Those of us who are interested in the teaching of hygienic life see in every educational institution a golden opportunity to spread the doctrine of good living. Education, after all, is designed to fit one for a useful career in life and such a career demands first and foremost a vigorous and healthy body.

Most of our institutions, like Topsy, have "just growed." The old buildings which are objects of reverence and affection to many were built at a time when our youth perhaps possessed more vigorous constitutions than those which the present-day fast living has brought about, and when the principles of lighting and ventilation were not as well understood as now. Partly through reverence and partly through the necessities of the case, almost all institutions are still utilizing many of these old buildings, and large classes are held in rooms absolutely unfit to furnish suitable accommodations.

HISTORY OF THE HYGIENIC MOVEMENT AT THE UNIVERSITY OF WISCONSIN

A history of the movement for better things in health matters at the University of Wisconsin will serve to elucidate many of the considerations which we wish to bring before you. Although the university is still comparatively in its youth, having recently celebrated its fiftieth anniversary, many of the buildings are antiquated as regards hygiene. A few years ago, several of the professors, recognizing that there was no one connected with the university whose special duty it was to look after the sanitation of the buildings and the health of the students, asked the president to appoint a committee on university hygiene. The first committee was composed of representatives from the departments of bacteriology and hygiene, physiology, physical training and home economics. The work was developed along several lines.

Ventilation.—First, an attempt was made to secure better conditions in the class-rooms and offices. Where artificial means of ventilation were not provided the windows were fitted with window-boards which permitted the raising of the lower sash without producing direct draughts on the occupants of the rooms. In most of the buildings a combined system of ventilation and heating had been installed. Direct radiation from the steam radiators was supplemented by passing air over steam coils by means of fans and blowing this into the rooms through galvanized iron channels. This apparatus was used for the most part only in extremely cold weather. When the weather was not cold enough to require the use of both systems no artificial ventilation was given at all. The committee insisted that the fans should be used for ventilation and not merely to supplement the heating of the rooms. This improved matters considerably, but still many complaints came in to the committee from professors and students alike that the rooms were stuffy and close, causing headache and sleepiness.

Humidity.—A study of the humidity of the air in a number of these rooms was next undertaken, and it was found that the moisture was frequently as low as 20 per cent. and some times as low as 14. The moistening of the air was brought about by the introduction of steam jets into the ventilating flues at or near the fan, so that the moisture would be thoroughly mixed with the air passing into the rooms. Examination of these rooms after this showed that the air was fairly well moistened and the comfort of the occupants of the room was greatly increased. Several of the professors who had used these rooms for ten or more years stated that never in their experience had they lectured with so little fatigue and discomfort. The committee has several times asked for funds to make more complete studies of the air of class rooms, but it has not been able to procure them up to the present time.

It is not believed that conditions at Wisconsin were worse than those at many other institutions, and yet the actual state of affairs was represented by the following incident. The matron of the woman's dormitory went into the room of one of the girls and, noticing the bad air, called the girl's attention to it, and received this reply: "What, is the air bad here? Since coming to the university I have become so used to bad air that I do not notice it any more."

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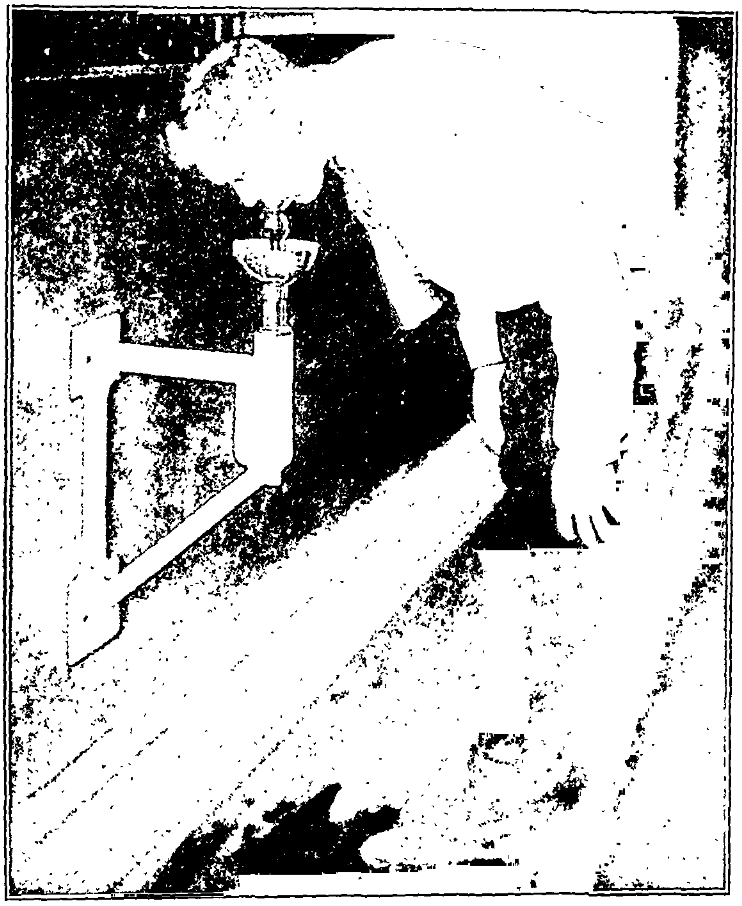

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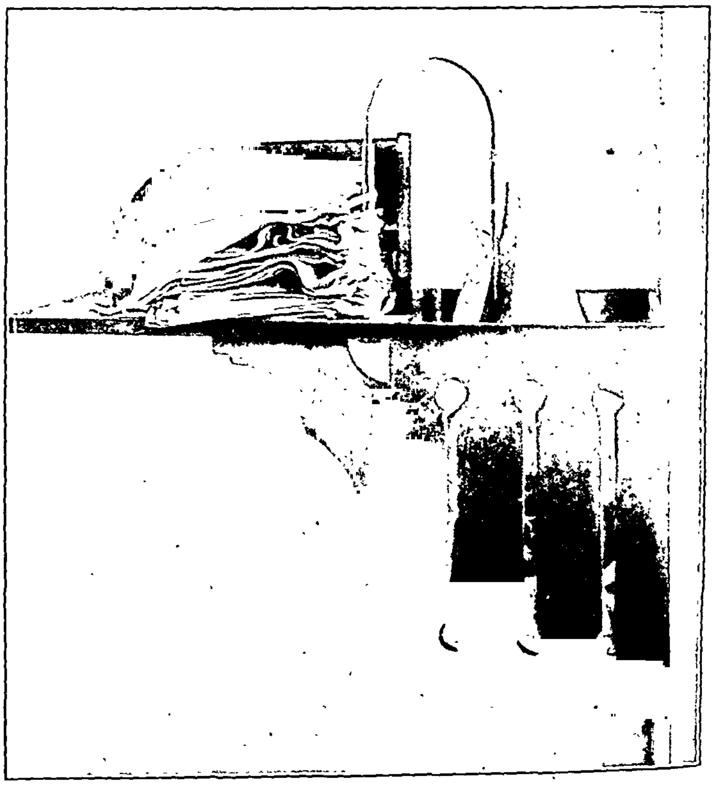

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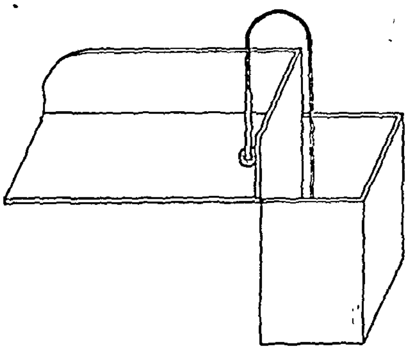

Fig. 3.—Drawing of towel distributor.

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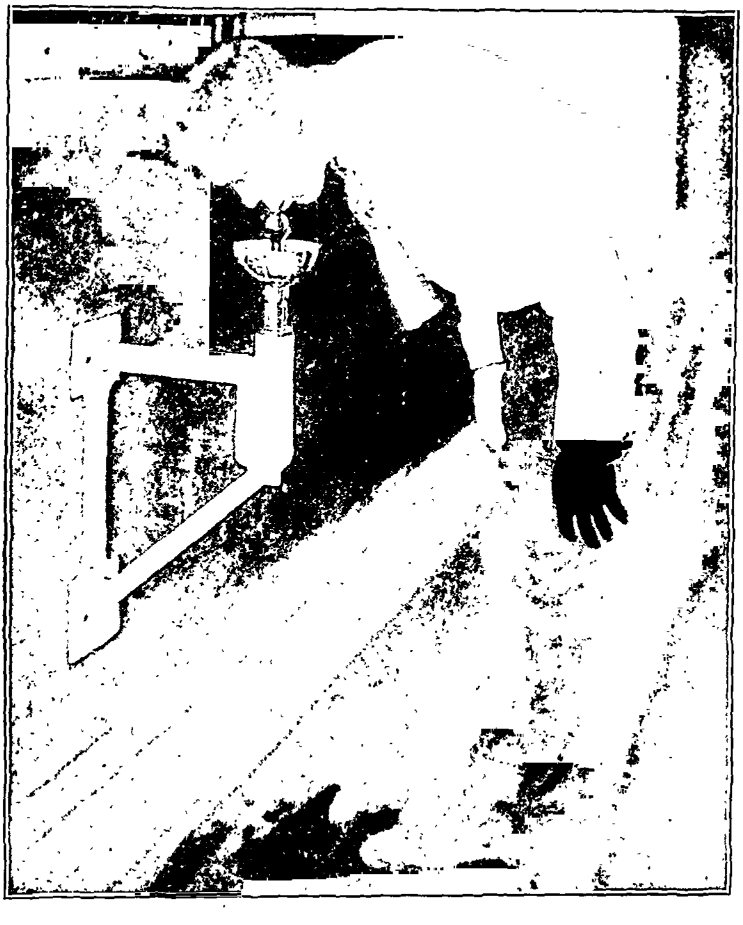

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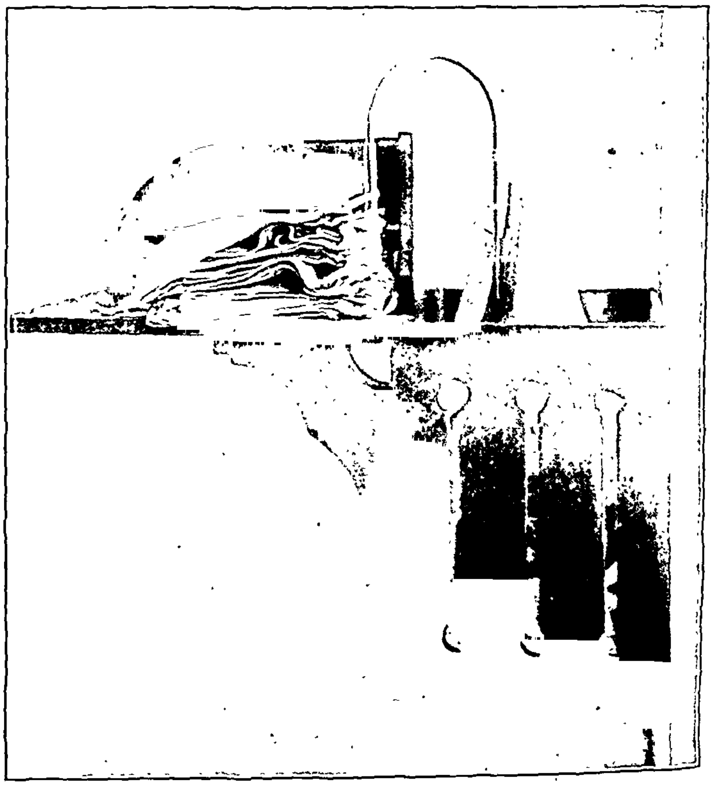

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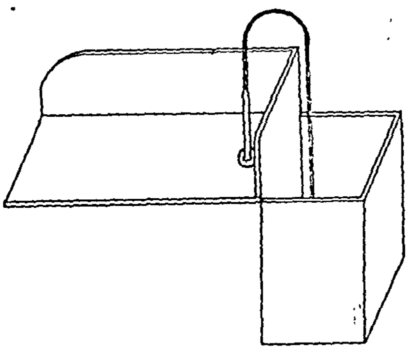

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Specific diagnosis is important because the infection is undoubtedly transmitted by flies or mosquitoes and the ulcers should be properly treated and protected by dressings from the visits of suctorial invertebrates.

The case reported here is the third one found to date and illustrates certain peculiar features of the disease: the chronic eroding character of the ulcer, its location on an exposed part, the presence of a second ulcer near by (auto-inoculation), the history of a fly-bite, and the difficulty experienced in this case in finding the pathogenic agent.

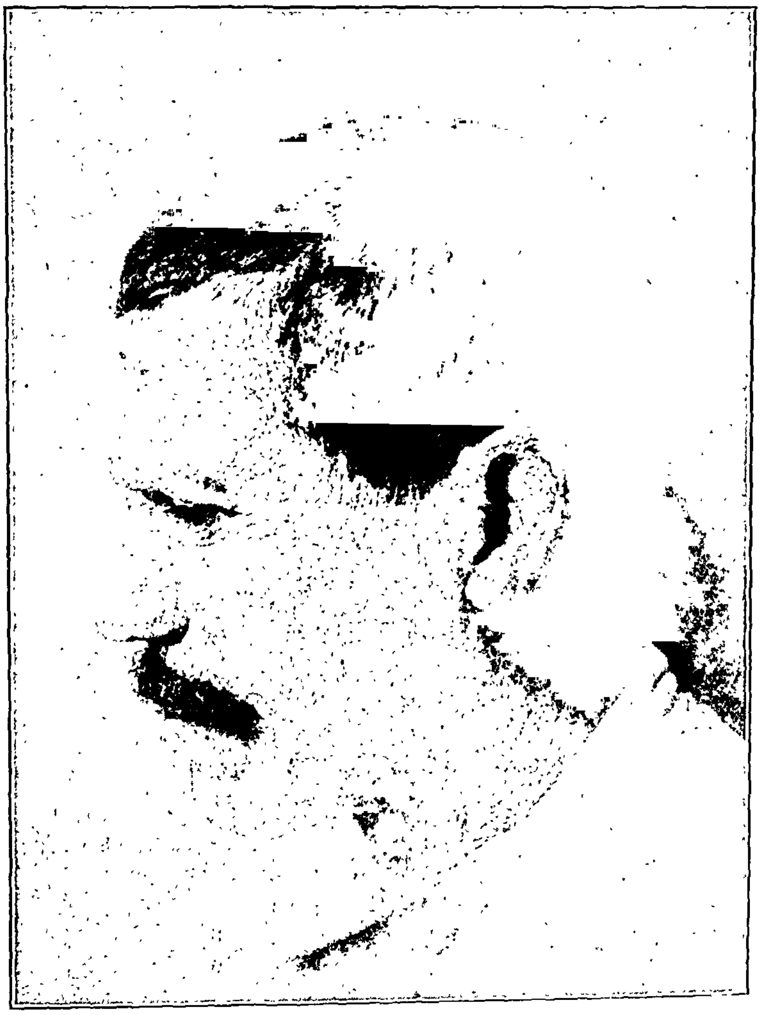


Fig. 1.—Patient with oriental sore on left ear.

It should be mentioned that each one of the three patients affected with this disorder who have been examined up to date gave a history of being bitten by a fly out in the bush. No case has arisen as yet within the zone of sanitation.

CASE REPORT

History.—A. V., Hospital Number 88,593; aged 43; native Colombian laborer; born in Cartagena, came to Panama during the régime of the Compagnie universelle du Canal interocéanique, and has lived continuously in Panama for twenty-two years. Recently he had been working with surveying parties in the bush near Frijoles. He was admitted Nov. 25, 1910, with well-developed pulmonary tuberculosis. The peculiar lesions on his left ear were examined on two occasions for the presence of *L. tropica* and on the occasion of the second examination after a crust had been permitted to form, a few characteristic microorganisms were detected.

Examination.—When seen December 21, his left ear was of a dusky, brawny color, somewhat swollen, and the skin rather tense. The margin of the helix was eroded for about 3 to 4 cm. and covered with a depressed, tough, dry crust. At its junction with the lobule there was a second smaller ulcer, circular in shape, about 1.5 cm. in diameter, covered with a flattened tough crust (auto-inoculation). The appearance of the ulcers was suggestive of lupus or rodent ulcer and of Oriental sore. A protective dressing of boracic acid ointment was applied constantly and some improvement in the appearance of the lesions was noted, but the infiltration of the margin of the skin about the ulcers increased. The patient refused more radical treatment on account of his feeble health.

The larger ulcer made its appearance, according to the patient, six or eight months before the date of his admission to the hospital. He believed that it followed a fly-bite, but on inquiry about the variety of fly and additional circumstances connected with the development of the sore, rather a fanciful statement was made by the patient. This is given as it conveys the natives' notion about the cause of this chronic type of skin ulceration.

The fly which the natives believe causes the ulceration is called by them *mosca bayano*. This fly, they say, is found only in the woods in the large yellow flowers of the bayano, a jungle plant. It was impossible to get from the patient a very exact idea of the kind of fly. When shown a number of specimens of *Tabanus, Musca, Stomoxys, Pyrellia, Compsomyia,* and others, he thought the fly was about the size of *Stomoxys calcitrans*, but when he described its habits he said that on approach, the flies darted away so quickly that one could not make out either color or markings. Again the patient said that the fly did not really bite or draw blood, but deposited white feces which made the skin rot.

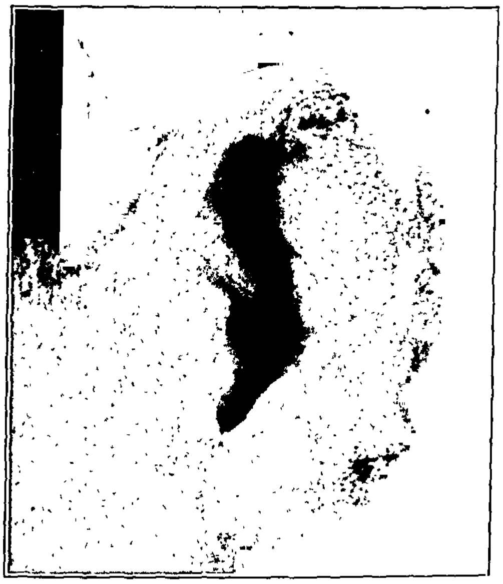


Fig. 2.—Closer view of oriental sore.

After the visit of the fly the place began to itch, a blister formed, which was scratched considerably, increased in size and became purulent. An ulcer soon appeared, which, with each removal of the scab, became deeper and larger.

Whatever the mode of infection may have been, there is no doubt of the cause: smears taken from just beneath the raised margin of the crust, when stained by Hastings' and Giemsa's stains, contained a few intracellular and extracellular specimens of *L. tropica*, exactly like those described in the case to be published by one of us (S. T. D.) in the *Archives of Internal Medicine.*

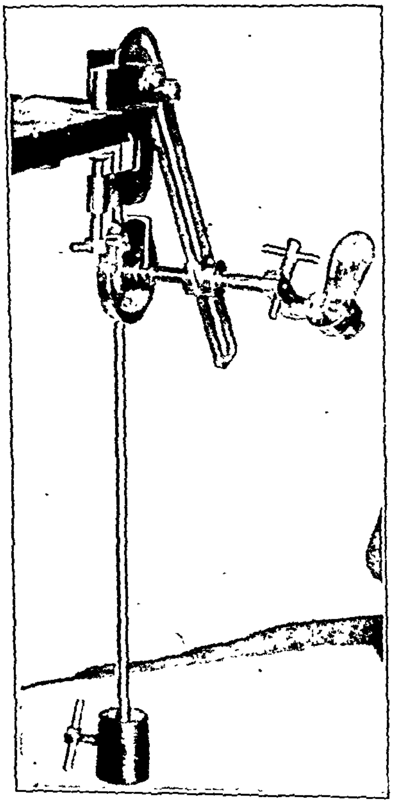
Regulation of Diet.—An ideal diet should be one with not less than 1,500 calories in the twenty-four hours, containing the foodstuffs in as assimilable a form as possible, entailing the least work on the eliminative organs in ridding the body of waste products.—A. Eustis, in *New Orleans Medical and Surgical Journal.*

MINIATURE EXERCISE MACHINE FOR INFANTILE PARALYSIS *

MAX STRUNSKY, M.D.
NEW YORK

In treating chronic infantile paralysis by massage, electricity and passive motion of the paretic muscles we must not forget that the seat of the disease is not in the muscles, but in the anterior, gray cornu of the spinal cord, and that atrophy and degeneration in this disease are not limited to the muscles alone, but involve all the structures that enter into the muscular contraction, chiefly, the spinal nerves, the motor cells in the spinal cord, the conducting tracts, the motor brain centers dominating the affected muscles, as well as the weakening of the will power to concentrate on these muscles.

Function is the antagonist of atrophy and degeneration. Massage, electricity and passive motion exercise the muscles, but they do not exercise the other structures involved in the voluntary muscular contraction, and the effect of such exercise — whatever it may be—is limited to the muscles. Permanent benefit to the paralytic muscles is produced only by voluntary exercise because in such exercise the structures involved are simultaneously and cooperatively functioned. The effect of voluntary muscular contraction is to exercise the will power and the atrophic motor brain centers and, by reciprocal action, to develop the motor cells in the spinal cord and the strength of the muscles.



Miniature Zander machine for exercising limb in infantile paralysis. May be attached to a table or chair.

That the spinal motor power can be developed is proved by the improvement that takes place in infantile paralysis often years after the original attack, and by the increased strength in the paralytic limb after scientific and persistent treatment, and by the fact that a great many children, especially those that are mildly affected, gradually outgrow their trouble.

Improvement in chronic infantile paralysis cannot be accounted for by the regeneration of the destroyed motor cells in the spinal cord. The pathologic law that dead organic cells never regenerate is fixed. Improvement can be explained only by the development of the motor gray matter in the spinal cord based on the physiologic law that cells increase in size and strength with function. This is accomplished by the use of the paralytic limb, by muscle education, whereby the child develops his mental power to force the contraction of the paretic muscles, and by the natural growth and evolution of the cerebrospinal system during childhood.

Voluntary exercise of the paretic muscles, the most important element in the treatment of chronic infantile paralysis, is, unfortunately, monotonous and the child's feeble attention soon wanders from its work. The machine illustrated gives the child something to do, with the result that more voluntary muscular contractions are accomplished. The machine is also labor-saving, inasmuch as it assists and resists the movements of the paralytic limbs automatically and takes away this strain from the person supervising the physical culture.

The instrument shown in the illustration is a miniature Zander machine. It is small, portable, cheap, and can be attached to a table or chair. The child sits on the table or chair to which the machine is attached and the paralyzed limb swings the handle. The resistance to the movement is regulated by the length of the pendulum and the "assistance" by the angle of the handle.

Resistance to the movements must be gradually increased. This cannot be done with the hand, because it is hard to remember the exact force exerted at the previous treatment. By regulating the length of the pendulum the resistant force is controlled to a fraction. The gradually increased length in the pendulum is also the record which tells of the amount of improvement that has taken place in the paralytic limb in a given time.

24 West Forty-Fifth Street.

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* Demonstrated to the Orthopedic Section, Academy of Medicine, New York City, March 17, 1911.

THE TRANSPLANTATION OF BONE FOR CORRECTION OF DEPRESSED DEFORMITIES OF THE NOSE

REPORT OF CASES *

WILLIAM WESLEY CARTER, A.M., M.D.
Assistant Surgeon, Manhattan Eye, Ear and Throat Hospital
NEW YORK

It is not my purpose in this paper to discuss the fundamental principles of bone transplantation in the human body, nor do I intend to review in detail the work of the various experimenters in this field of surgery. Suffice it to say that nearly all that has been written on this subject has had to do with supplying defects in the various bones of the body, chiefly those of the head and the long bones, while little has been said about the introduction of bone into the soft tissues, where the conditions for its nourishment and growth must differ widely from those where the graft is used to supply a deficiency in the continuity of another bone.

It is generally admitted (1) that the autoplastic operation, i. e., the transference of bone from one part of the body to another gives the quickest and best results; (2) that homoplastic transplantation, i. e., from one animal to another of the same species, is usually successful; (3) that heteroplastic transplantation, i. e., from one animal to another of a different species, is unsuccessful.

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* Read before the New York Academy of Medicine, Section on Laryngology, Dec. 28, 1910.

The belief is almost unanimous that it is necessary to include the periosteum with the graft; with this view, however, I do not agree.

There are a variety of opinions as to the fate of the implanted bone, the majority of writers believing that it is resorbed and new bone deposited in its place by the periosteum. This however, so far as I know, is the observation of those who have done only the homoplastic operation and who removed the periosteum with the graft; their work, therefore, sheds little light on the ultimate fate of the bone in my cases, for each of my patients furnished his own tissue for transplantation, and no periosteum covered the graft. The observations of all these writers relate to implantation for defects in the various skeletal bones, and however interesting and pertinent they may be to the work in hand, the scope of the present paper does not admit of their discussion.

Depressed deformities of the nose, from a surgical point of view, may be divided into two classes: (1) cases without loss of bony tissue; (2) cases in which a large part of the bony framework of the nose has been destroyed.

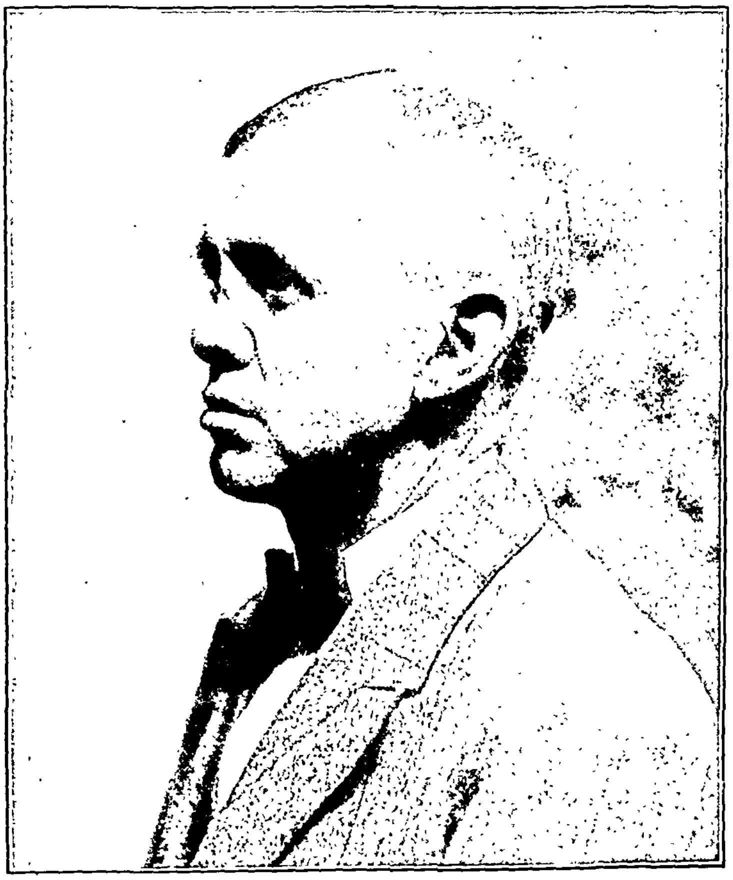

Fig. 1.—Patient in Case 3 before operation.

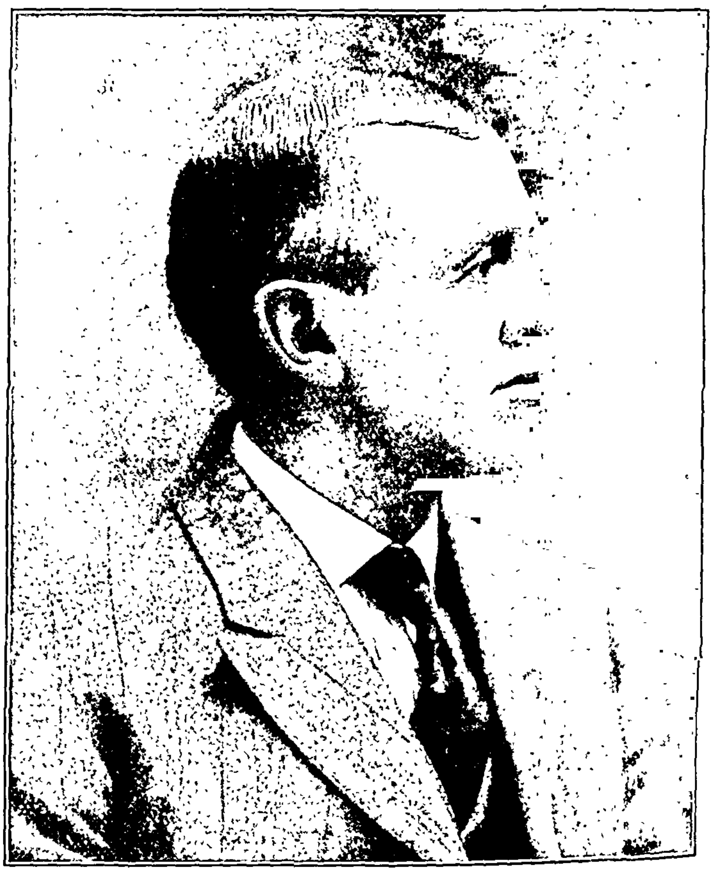

Fig. 2.—Patient in Case 3 after operation, from an unretouched photograph.

Cases of the first class are suitable for my bridge-splint operation, which I have described[1] in a previous paper, and which I have used with satisfaction in about forty cases.

But patients in the second class, as I stated in my first presentation of the subject, cannot be relieved by this method, for the success of the bridge-splint operation depends on the presence of a sufficient amount of bony tissue in the nose to retain it in the corrected position after the removal of the supporting bridge.

The cases which I report are from the clinic of Dr. Harmon Smith at the Manhattan Eye, Ear and Throat Hospital. Each patient had a depressed deformity due to traumatism, and each had suffered considerable loss of bony framework of the nose.

The deformity in each case being clearly due to the deficiency in bone, it occurred to me that this might be supplied by transposition of bone from another part of the body; my idea being that the transplanted tissue would receive only a temporary injury, and that it would continue to live and would take part in the process of repair in its new position in the nose.

I decided to use the rib for the following reasons:

1. A portion of the rib is easily removed, especially about the middle of the ninth rib, where the muscular covering is very thin. The patient is caused no inconvenience, and the resected portion is quickly reconstructed from the periosteum. This new growth of bone is hastened by the movements of the chest, for it has been found that a certain amount of irritation is favorable to bone-production. According to Ollier from three to eight months are required for the construction of a bone of considerable size, while he has known a metacarpal bone to be restored in forty days.

2. The shape and structure of the rib favor its use for this purpose. The rib is composed of cancellous tissue covered with a thin layer of compact bone. When the bone is split and the cancellous tissue removed, the strips of compact bone can be easily shaped to suit the deformity and, if the occasion demands it, several layers of this bone can be superimposed. It is necessary to remove the cancellous tissue, as this does not add to the vitality of the graft. In cases in which implantation has been made for defects in the long bones and the medullary tissue has not been removed, it has caused an irritation and aseptic fever.

Furthermore, I believe that the rib is well adapted for transplantation purposes, because it is so abundantly supplied with minute nutrient foramina. This can be easily demonstrated by examining the surface of a rib with a lens and comparing it with the tibia.

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[1] Carter, William Wesley: The Correction of Depressed and Irregular Deformities of the Nose by Mechanical Replacement, The Journal A. M. A., Dec. 4, 1909, p. 1893.

My reasons for removing the periosteum from the grafts are: First, it is easier to resect a rib without injuring the pleura by shelling it out of its periosteal covering. Besides it is desirable to leave the periosteum for the reconstruction of the rib. In the second place, I believe that the bare bone is more quickly and surely nourished by the connective tissue envelope which quickly covers it when it is introduced into the soft tissues of the nose. In this location, all we want is sufficient nourishment for the implanted tissue, we have no desire to grow bone; hence we can dispense with the osteogenetic layer of the periosteum.

The operation in all three of my patients was essentially the same.

The skin over the nose and over the ninth rib on the right side is prepared for an aseptic operation; a short, transverse incision is made down to the bone at the nasofrontal suture. Through this incision the skin and subcutaneous tissues over the dorsum of the nose are elevated with a long, thin, two-edged knife, curved on the flat. (A Seiler septal knife answers the purpose very well.) Above this incision the tissues, including the periosteum, are elevated for about three-eighths of an inch. This wound is covered with sterile gauze. The ninth rib at about its middle is then exposed for two inches and shelled out of the periosteum and removed. I then split this section of rib in its transverse diameter, scrape off its medullary portion and shape one of the strips of bone to suit the deformity. This is then inserted into the wound in the nose previously made for its reception, care being taken to insert the upper end under the periosteum over the nasofrontal process. Both wounds are then irrigated with sterile salt solution, closed with silk sutures and sterile dressings applied. The dressings are changed for the first time on the seventh day and the sutures removed two days later.

CASE 1.—The patient was a little girl, aged 6, who, when 2 years old, fell on her nose, fracturing it. The nose retained its infantile type, developing broad and flat and scarcely protruding beyond the general level of the face. On examination, no nasal bones could be demonstrated. After the operation, which was performed on June 21, 1910, the profile was almost perfect and has remained so up to the present time.

CASE 2.—This patient, a woman, aged 25, fell on her nose when she was 7 years old, the injury in this case being followed by septal abscess. There is no history of specific infection, and the woman says that she has always enjoyed the best of health. The deformity was marked and was of the flattened and concave variety.

Operation was performed on June 25, 1910. In this instance two layers of bone grafts had to be superimposed. When the deformity had been completely corrected the tension on the skin was so great that it became blanched; so, fearing that sloughing might occur, I had to slip the transplanted bone up a little, which left a slight depression near the tip. The bridge, however, is completely reconstructed and the result is satisfactory. There has been no retrograde change in the profile up to the present time, seven months after the operation. The bone is firmly imbedded and interstitial union seems to have occurred between the two implanted fragments.

CASE 3.—A railroad man, aged 47, always healthy, and having no specific history, was knocked down by a train on Dec. 14, 1908. In addition to other severe injuries, his nose was almost completely destroyed (Fig. 1). The nasal bones, the nasal processes of the superior maxillæ and the septum were involved. Erysipelas followed the injury and much bony tissue sloughed out. The bridge was badly depressed and flattened, and a large scar bound the skin to the subjacent tissue. The septum was almost completely destroyed. The case presented a very unfavorable outlook for correction by any method of treatment.

Operation, which was done on Oct. 20, 1910, was somewhat tedious, owing to the large amount of scar tissue making it very difficult to elevate the skin over the dorsum of the nose, The elevated flap, too, was very thin, owing to the large destruction of skin at the time of the injury. A piece of the rib about 2 inches long was inserted, one end extending well down to the tip of the nose, and the other resting on the nasal process of the frontal bone. The normal coutour of the nose was immediately restored. The grafted bone acted as a rafter, being firmly supported by the nasofrontal process, and it continued to exert a gradual traction on the soft tissues of the nose, which, having been unsupported, had subsided into two folds on either side of the nose. Within two weeks these folds had completely disappeared, the tissue having been drawn up into its proper place in the nose. The result in this case was practically perfect (Fig. 2).

In none of these patients did the temperature rise above normal, and none complained of much discomfort after the operation. The recovery of all was uneventful, primary union of the wound being obtained in each instance.

The vitality of the bone seems to have been affected in no way, and it is my belief that it has taken part in the process of repair, being nourished by an envelope of connective tissue forming practically a new periosteum. Certainly none of the transplanted bone has as yet been absorbed, and I see no reason why it should be, since the transplanted tissue is not a foreign body but is a living part of the same body into which it is replaced. Its molecular constitution is exactly the same as that of the tissues that surround it in its new position. Therefore it will continue to live, provided that its circulation is reestablished from the surrounding tissues; a sufficient time has elapsed to make us feel reasonably certain that this has already occurred in all three of my cases.

I believe that a large proportion of what have been considered hopeless cases of nasal deformity may be relieved by this method of treatment. Its superiority over all methods involving the introduction of foreign bodies into the tissues is self-evident.

69 West Fiftieth Street.

Black Plague in Newspaper Advertising.—It is encouraging to note from time to time in these columns the indications of an awakening conscience on the subject of truthful advertising. In an address at the one hundred and tenth dinner of the Sphinx Club, at the Waldorf-Astoria, New York City, James Schermerhorn, publisher of the Detroit (Mich.) *Times*, gave little comfort to newspaper men who sell advertising space to any one who has the price to pay for it. "It is a shabby trick," he said, "to capture the reader with editorials upholding the decencies of life only to deliver him over to the spoilers who lie in wait for him in the advertising section of the paper. There is a white plague, and philanthropists are fighting it. The publisher helps in his editorial and news columns. But in his business section there is a black plague, an inky infection in the form of spurious consumption remedies offering false hope to the hopeless; brazenly guaranteeing to cure the incurable. The awful cry of the despairing leper, 'Unclean! Unclean!' ought to be branded on the newspapers infected by the black plague. What of the publisher who entices his readers into wildcat investments by lifting the shell and showing the pea? Is he an opinion-holder or just a capper? The genuine brand of national righteousness should begin with the newspaper that advocates it. It is better to protect the reader every day against chicanery and betrayal than to use tainted money for the spectacular schemes for relief." Such public statements as these help to bring the day when there will be but one standard for right and wrong, and when there will be no privileged class that is permitted to lie and swindle with impunity.

POTASSIUM PERMANGANATE AS A HEMOSTATIC

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NEW YORK

History.—A new-born baby boy, Jewish, weighed 9 pounds, had good color, nursed well and looked healthy up to the eighth day. No history of hemophilia. When the cord was tied and divided immediately after birth, there was no unusual bleeding and on the sixth day it came off.

Hemorrhage.—On the eighth day, about noon, the boy was circumcised and bandaged. Two or three hours later, the nurse noticed that the bandage and parts of the diaper were saturated with blood. She called me, and, finding the oozing very slight, I ordered gauze saturated with hydrogen dioxid to be applied to the bleeding surface. This I had found adequate to control hemorrhage in apparently similar cases. About 7 p. m., I was again called. The bleeding had not ceased, though the oozing was just as slight as before. I applied styptic cotton, adrenalin 1 to 1,000, powdered alum, tannic acid, and solution of silver nitrate, at different times, but without result. The family became so anxious and excited that they took the child to the hospital. There the skin was stitched to the mucous membrane above the glans, in the hope that this would help to check the bleeding; but it did not. In the two days the baby was in the hospital, it grew so pale and weak from the loss of blood that the father, not getting much assurance from the surgeons of its recovery, took it "to die at home," as he said.

Application of Potassium Permanganate.—On the fourth day after the circumcision I was called hurriedly. The baby was extremely pale and very feeble. It could not nurse from the breast but when some milk was pressed from the nipple into its mouth it slowly swallowed it. Temperature was subnormal; pulse and heart-beats were so weak and rapid that I could not count them. I again tried various styptics, but the result was as disappointing as before. I recalled that on several occasions of slight bleeding from small cuts, I used potassium permanganate with good results. I applied powdered potassium permanganate to the wound. The oozing immediately ceased and there was no recurrence of bleeding.

The action of the potassium permanganate in this case surprised me, and I mention it not with any enthusiastic conclusion, but merely that others may perhaps think of it in similar cases when the usual other agents fail to give good results. A deep cut on the forehead caused by a fall three months later healed without trouble.

321 East Tenth street.

UNUSUAL IDIOSYNCRASY TO ASPIRIN

G. BURTON GILBERT, M.D.
COLORADO SPRINGS, COLO.

The following case is reported because it seems unusual, and because of the violent reaction to an extremely small dose of aspirin. Judging from reports in the literature, poisoning from large doses of aspirin is relatively more frequent than that from small doses, which alone can show a distinct idiosyncrasy to the drug.

History.—On June 20, 1910, the patient, a woman aged 40, on complaining of slight frontal headache, was given, at 10 a. m., 5 grains of aspirin and $^{1}/_{60}$ grain strychnin sulphate, with instructions to take a similar amount of each at the end of one hour, if the headache persisted.

Symptoms of Poisoning.—Fifty minutes later I was called and found the patient very nervous, excited and frightened. She complained of feeling queer and dizzy. The headache was worse and pain in the inner corner of the right eye was intense. Both eyes were puffy and much swollen, especially under the lower lids. She complained of severe itching all over her head, which she scratched almost constantly. In about fifteen minutes the lips began to swell, reaching three times their normal thickness, and being tense and almost purple. This edematous condition also involved the upper portion of the throat. The voice became husky and breathing very difficult, the patient being unable to lie down. The finger-nails and ears were blue; the pulse was 110 and very irregular, while the temperature remained subnormal. The patient next complained of stiffness in the back of the neck and insisted that her throat was closing up. The itching extended over the ears and back, thence over the entire body, being accompanied by large blotches or wheals. Thus there was a generalized urticaria with a condition of the lips and throat resembling urticaria gigantea or angioneurotic edema.

Treatment and Result.—Cold compresses were applied to the lips, eyes and throat, and an ice bag was applied to the head. A hypodermic injection of $\frac{1}{4}$ grain of codein was followed in twenty minutes by another of 10 minims of epinephrin (adrenalin chlorid). Warm water containing a little salt was given until vomiting was induced at half past twelve. After this the patient felt somewhat better. She was given an injection of 1/60 grain of strychnin and a high enema. Within half an hour the swelling in lips, eyes and feet began to go down, the color improved and the breathing became easier. About 4 p. m., the patient fell asleep and slept for thirty minutes. By 6 p. m. the urticaria had disappeared except from the back of the neck and the only painful spot was in the right eye. On the following day the woman had entirely recovered except for considerable weakness and some aching in the back and legs.

The patient gave a history of having been poisoned on two other occasions; once from some spoiled sea food, when she was much sicker than anyone else in the party, and once from morphin which her physician had told her never to take again. She was also subject to chronic bronchial asthma. Therefore, the above may represent an asthmatic attack brought on, aggravated and complicated by an intense idiosyncrasy to aspirin.

817 North Cascade Avenue.

THE CAUSE OF THE IMMEDIATE PAIN AND ABSCESS FOLLOWING THE ADMINISTRATION OF SALVARSAN BY THE ALKALINE SOLUTION METHOD

B. C. CORBUS, M.D.
CHICAGO

The intravenous method of administering salvarsan will continue to hold its position as the most comfortable one for the patient, but whether or not it is as potent in the later stages of syphilis, time will have to tell. The trend seems to be toward some form of intramuscular injection.

As the alkaline solution method seems to be the most feasible and simplest in preparation and most far-reaching in its results in the later syphilids, it has been the aim of many observers to perfect it as far as possible. The two objections against this method have been the pain and lasting induration following the injection, the induration being followed at times by abscess formation. In all the reports published, such abscesses are sterile.

In my experience, covering 100 cases, I have found that the pain and induration are due to the sodium hydrate. The directions that accompany the tube of salvarsan advise that a 15 per cent. solution of sodium hydroxid be used in making the solution alkaline. One can readily see how easy it is to get an excess of sodium hydroxid; even one drop might cause an excess of alkalinity which would not only cause excess of pain, but in an ill-nourished individual might cause considerable necrosis. Following the Alt-Lesser technic, I used a 4 per cent. solution (normal sodium hydroxid) and my success was good in regard to pain and induration. Only twice have I observed an abscess. In one case, the patient was extremely debilitated, and in the other I had to deal with an excessively fat individual. In each of these cases, I believe the abscess was the result of the sodium hydroxid.

I now use a 2 per cent. solution of sodium hydrate. In this way any excess of alkalinity is more easily avoided, the initial pain is lessened, and I find that uniformly the coagulum formed in the muscles is absorbed, leaving the muscles in a soft, pliable condition ready for a second injection whenever necessary.

I first put the 0.6 gm. of salvarsan in a 25 c.c. graduated cylinder, and dissolve it in 8 or 10 c.c. of hot water. The sodium hydroxid is then added in small quantities until a clear solution is obtained, care being taken not to add any sodium hydrate in excess. Hot water is then added in sufficient quantity to bring the total solution up to 20 c.c.: 10 c.c. of this solution are injected deeply into the buttocks on either side. Great care should be used to keep the injected fluid out of the adipose tissue. The sodium hydrate solution should be sterilized before each injection. This is also true of all the glassware used.

32 North State Street.

Modern Conditions Require Evolution in Personal Hygiene.—Dr. Irving Fisher, president of the American Health League, in an article in the New York *Christian Advocate*, says that the health movement means a revolution in the habits of living now prevalent in this and most civilized countries. It seems a radical statement, yet no observer can fail to see that it is already in process of realization. The "outdoor life" undoubtedly has come to stay, including even the growing custom of sleeping out of doors. Likewise, largely under the influence of Mr. Fletcher, and with the approval and aid of scientific and medical authorities, says Fisher, the art of eating is changing rapidly. When hard foods, thorough mastication, and lessened consumption of protein have become universal, we may expect to see less of the dentist or the stomach specialist. The invention of cooking and preparing foods has been a much mitigated benefit. While it has widened the variety of man's diet, it has led to the decay of his teeth. Many of the other inventions of civilization have their unhygienic side. The invention of houses has enabled mankind to dwell in all parts of the world, but it is responsible for tuberculosis; especially after glass was devised, which, while letting in the light, keeps out the air. The invention of the alphabet and printing has made possible the accumulation of knowledge, but it has produced eye-strain with all its attendant evils. The invention of chairs has added to human convenience, but has led to spinal curvature and abdominal congestion. The device of a division of labor has added to wealth, but has destroyed the normal balance of mental and physical work, recreation and rest. Similar fault may be found with clothing, especially corsets, shoes and hats, and with numerous other contrivances. Yet it would be foolish, even if it were possible, to attempt to "return to nature" in the sense of abolishing civilization. We must not go backward, but forward. The cure for eye-strain is not in disregarding the invention of reading, but in introducing the invention of glasses. The cure of tuberculosis is not in the destruction of houses, but in devices for ventilation. It is a little knowledge that is dangerous. Civilization can, with fuller knowledge, bring its own cure, and make the "kingdom of man" far larger, even in respect to hygienic conditions, than "nature" people can even dream of. Unhygienic customs and fashions are exceedingly slow to yield, but they do yield in the end. It should be the part of intelligent men to lead in hygienic reform, not by intolerant and impatient abuse, but by the quiet force of example

Therapeutics

CONSIDERATIONS IN THE MANAGEMENT OF PULMONARY TUBERCULOSIS

The earlier treatment is commenced in pulmonary tuberculosis, the better for the patient, and the greater the chances of an ultimate cure. This axiom indicates the importance of an early diagnosis of the presence of the disease. One of the benefits which has resulted from the recent agitation in regard to tuberculosis is the more frequent recognition of the disease at its beginning. Before the present general interest in tuberculosis, it was not uncommon for patients to go untreated until they had reached an advanced stage of the disease. Less often, but altogether too frequently, patients were under the care of a physician for months before the real nature of the trouble was recognized. So much has been said and written on this subject within the last fifteen or twenty years, that no physician is excusable for neglecting to recognize the nature of the disease as soon as he undertakes the treatment of the patient.

At this day, it is hardly necessary to enumerate the symptoms which would lead one to suspect the presence of the disease and to act on his suspicion by making a thorough investigation of the case, including a careful physical examination. Among these symptoms may be mentioned loss of strength, loss of appetite, loss of weight, loss of physical and mental energy, increased body temperature, increased rapidity of the heart, increased rapidity of the respiration, cough, especially when accompanied by vomiting, and hemoptysis. When any of these are present, if some other cause cannot be found, the presence of tuberculosis should be suspected, and the possibility of its existence should not be given up while the symptom exists, or until some other cause for it has been found.

As soon as it is definitely determined that the patient is suffering from pulmonary tuberculosis, several important questions arise and demand an early solution. In the first place, it must be determined whether the patient shall be treated at home, or shall be sent to a sanatorium in the neighborhood of his home, or shall be ordered a complete change of climate. Certain conditions may determine that the treatment shall be conducted for a time at least, in his own home. When the patient is found to be in an advanced stage of the disease, with a high temperature, rapid pulse, poor appetite, frequent cough, and copious expectoration, it is, in most cases, poor judgment, and cruel, to advise such a person to leave home and friends in order to have the very slight advantage which change of climate will afford him. On the other hand, it may happen, in rare instances, that even patients in the very worst condition improve, contrary to our expectations, hence if the patient manifests considerable powers of natural endurance, and is not likely to be unfavorably influenced by separation from his friends, he may be allowed, even if the symptoms are serious, to try a change of climate. But such cases are certainly rare. Many patients must be treated in their own homes because they cannot afford to leave their homes and be at the expense of traveling and paying board in a sanatorium or health resort.

If the patient while showing sufficient symptoms to enable the physician to make a positive diagnosis is at the same time not very weak, not suffering from much fever, and not coughing very much, it may be wise for the physician to suggest a very radical move. Unquestionably, in some instances, it is the duty of the physician to advise the family, for the sake of the stricken member, to sever all relations with the community in which the disease has arisen, to sell their home if necessary, to dispose of their business if they have one, and to remove as a whole to a climate where the patient may recover from his disease, and to remain there permanently. This advice may be based on the now generally recognized fact that, if a person suffering from incipient tuberculosis goes to a climate where he recovers from the disease, he should continue to reside there, probably for the remainder of his life, certainly for many years. The converse of this is often true, viz., that patients who have recovered from tuberculosis in any particular climate, when they leave this climate and return to their former residence, often have a recurrence of the disease and go from bad to worse, or frequently develop pneumonia and die of that disease.

When a change of climate has been determined on, there is a wide range for choice in the selection of the particular climate, and it cannot always be determined in advance what climate will be best for the individual patient. Sometimes the patient's own experience of feeling better in summer or in winter will determine the selection for him of a mild or a cold climate. Often it will be found that patients who were born and have passed the early years of their life in a northern climate will do better, when making a change of climate, to select a cold climate. On the other hand, people who were born and raised in a warm climate, and who habitually feel better in summer, will usually do better in a warm climate, such as that of Florida or California.

Those who have a great tendency to have new foci in lung tissue break down, and those who have profuse bronchial discharge, and those who have fibroid phthisis, will generally do well in Arizona and New Mexico.

Some patients with pulmonary tuberculosis do well at the seashore, as has been observed to be the case with children suffering from bone and joint tuberculosis.

On the other hand, many do well in a mild climate, such as in the hills of the Carolinas.

Those who seem likely to do well in a cold climate, may be recommended to go to the Adirondacks or to Colorado.

Altitude is a thing that must be considered in selecting a climate for the tuberculous patient, and it will be found that those of nervous temperaments, with weak, rapidly acting hearts, those with high fever, and those with a tendency to hemoptysis, usually do not do well at a high altitude. On the other hand, those who are depressed by the heat of summer, but who are stimulated and feel stronger in winter, frequently do not do well in a low altitude like that of southern California or Florida. Whatever opinion may have been formed by the physician in advance, if his opinion is not confirmed by the experience of the patient, a change should be made to a climate of a different character.

It should never be forgotten that very sick patients do not stand travel and separation from their friends well, and that patients who find a climate in which they can live comfortably are foolish to leave it.

If the family of a patient is in moderate circumstances, and the patient is in an early stage of the disease, removal to a sanatorium in the neighborhood is frequently advisable. In the first place, this removes a focus of infection from the family and friends of the invalid. It also places him in a position of being instructed as to the proper care of himself. These are very important considerations. Further, his symptoms are daily, perhaps hourly, observed; he is required to do what is best for himself, and he is furnished with abundant and nutritious food. These are of great importance, and most patients at the beginning of the disease are benefited by them, even in the absence of any very marked change in climate. Much may be accomplished by treatment in such an institution as has been lately demonstrated, but it is perhaps too much to claim that such treatment is just as good as treatment in a more distinctly advantageous climate. Unquestionably certain climates are far better for certain tuberculous patients than others; and, unquestionably, for many, a considerable altitude is better.

Wherever the patient is treated, the matter of air is of first importance, as it is also in the preventive treatment of the disease. The patient should remain out-of-doors, if possible, during the whole twenty-four hours. Space forbids here a discussion of the various methods which may be adopted in order to secure this. Shacks, porches, balconies, and window tents may be utilized in appropriate cases. If it is entirely impracticable for the patient to sleep out-of-doors, or while suitable provisions are being made for this, he should at least sleep in a room with the windows open, and in a room to which sunshine has access during the day. At the same time that he is enjoying the benefit of this fresh air, often cold air, he must be adequately protected so that he will not suffer from the cold. He should wear woolen clothing, and be covered with light woolen blankets supplemented by adequate bed quilts and puffs. In cold weather, the head and ears must be protected from chilling, and also the patient must be kept comfortable; *he should be protected from draughts.*

In the advanced stages it is not wise to insist on absolute out-of-door treatment in the coldest weather, and often not even in milder weather. If the patient is weak, he may be treated with benefit within his usual sleeping room, if the windows are allowed to remain open, and the cold air warmed, but the room not allowed to become over-heated.

The question of rest is pre-eminent, and the importance of rest has been increasingly recognized by the medical profession during the last twenty-five years. If the patient has fever even of moderate degree, it will do him very little good in any case, and in most cases will do him positive injury to exercise or even to sit up out of bed. Exercise, even walking or sitting up, is now generally recognized as being almost as detrimental to the patient with tuberculosis as to a patient with typhoid fever. It is necessary to diminish oxidation and to conserve strength as much as possible, and this can only be satisfactorily accomplished by keeping the patient in bed, this to be continued as long, at least, as the temperature rises to 100 F. at any hour of the day, and probably as long as it rises above 99 F. While this is the rule, it is possible that in exceptional cases in which the temperature rises to 100, but not above, the patient may be benefited by brief exercise each day, but these instances are exceedingly rare, and this privilege should be granted only in chronic cases with low fever and not very rapid pulse. A weak and rapid pulse is also a strong indication for rest in bed.

Next in importance to rest and fresh air comes the question of diet. Many patients have been tormented and abused by overfeeding, which has been a fad at many tuberculosis sanatoria. It is now generally recognized by the best authorities on the treatment of pulmonary tuberculosis that overfeeding beyond the provision of an adequate physiologic supply of food is not wise. The character of the food administered should depend somewhat on the digestive power of the patient. If there is much fever and the digestion is weak, a strictly milk diet may be employed for a limited time. This may be supplemented, as the fever diminishes, and the digestive power increases, by broths and gruels. As improvement continues, eggs may be added. For a convalescent patient and the patient who has not much fever and a good digestion, an ordinary mixed diet (excluding indigestible and innutritious foods) including all easily digestible and nutritious foods, such as milk, eggs, fresh meats, stale bread, boiled rice, baked potatoes, fresh vegetables and fruit in season, will be found useful.

If the patient is very ill and has much fever, the rest in bed implies refraining from doing any business, from corresponding, from reading, or from seeing much company.

The fresh air, the rest, and the diet are the sheet anchors of treatment. Medicines are entirely subordinate to these hygienic measures, and yet, in many cases they are of great value.

Barrels of cod-liver oil have been consumed by patients, and not infrequently with considerable benefit, improving the nutrition and lessening the cough and expectoration. It should, perhaps, be regarded as a food rather than as a medicine, and as a food, unquestionably it will prove of value in many cases.

For many years, the hypophosphites, and especially the hypophosphite of calcium, and in some cases the hypophosphite of sodium, have been used with apparent benefit. Recent studies of the physiologic action of calcium on cell growth and nutrition may lead to a renewal of interest in the hypophosphite of calcium. The use of a combination of half a dozen different hypophosphites need only be mentioned to be condemned. There is no reason for the use of such a combination except the desire of a physician to order some one of the many proprietary hypophosphite combinations on the market.

So many unkind things have been said by such distinguished authorities about creosote, that one hesitates to mention it in connection with this subject, but if one feels impelled to administer an antiseptic drug in the treatment of this disease in which an efficient antiseptic would be so highly esteemed, he cannot do better than administer the carbonate of creosote. It will rarely injure the stomach, and it may promote digestion and nutrition by preventing gastric and intestinal fermentation, and may possibly, and many men believe that it does actually, have a favorable effect on the pulmonary pathologic process.

For the fever it is usually not necessary to give any drug, the light diet and the rest in bed in cool fresh air usually accomplishing the desired result.

If there is much cough, some simple codein expectorant mixture may be given. Such a mixture must not be sweet. The following are suggestions for treatment of the cough:

R.	gm. or c.c.		
Codeinæ sulphatis	20		gr.iv
Ammonii chloridi	5		ʒiss
Syrupi ipecacuanhæ	5	or	fl.ʒiss
Syrupi acidi citrici	25		fl.℥i
Aquæ	ad 100		ad fl.℥iv

M. et Sig.: A teaspoonful, in water, every two or three hours. Shake.

Or,

R.	gm. or c.c.		
Codeinæ sulphatis	20		gr.iv
Ammonii chloridi	5		ʒiss
Syrupi acidi citrici	25	or	fl.℥i
Aquæ	ad 100		ad fl.℥iv

M. et Sig.: A teaspoonful, in water, every two or three hours. Shake.

Or, if the cough is just a throat tickling, without much expectoration, the following is often efficient:

R.	gm. or c.c.		
Codeinæ sulphatis	20		gr.iv
Alcoholis	10		fl.ʒiii
Spiritus chloroformi	5	or	fl.ʒiss
Syrupi tolutani	50		fl.℥ii
Aquæ	ad 100		fl.℥iv

M. et Sig.: A teaspoonful, in water, every three hours. Shake.

If there is profuse expectoration, a 5-grain tablet of terpin hydrate crushed by the teeth and taken with water four or five times in twenty-four hours is efficient in diminishing the amount of bronchial secretion.

Coughing that results in vomiting, or at least in retching is very likely to be due to either pharyngeal or lingual tonsil irritation and not to any trouble in the stomach. Gargling with some warm alkaline solution, as the *liquor antisepticus alkalinus*, diluted with equal part of warm water, or a Seiler's tablet solution, or gargling with one-fourth of a teaspoonful of salt and one-fourth of a teaspoonful of bicarbonate of soda to one-half a glass of warm water, will relieve and soothe the throat and stop this kind of irritation. Slippery elm and flaxseed tea are also valuable aids in stopping this lingual tonsil cough.

Codein is the best opium sedative to use. It does not dry up the secretions as does morphin, or interfere with digestion as does morphin, and is not as depressant as heroin.

The question of stimulants is one which often arises, and concerning which there is much discussion. In the advanced stages of the disease, where there is great prostration and no hope of recovery, alcoholic stimulants may be allowed on the ground that they increase the comfort of the patient and make him more reconciled to the wretchedness of his condition; otherwise, they should not be advised for habitual use. The various extracts of malt which contain a small percentage of alcohol are not to be included in this condemnation, and may often be administered with considerable benefit.

As has been urged before in these columns, unless a patient has become cured in a new climate and intends to remain there with new possibilities of occupation, he should, after recovery, return to the occupation to which he is accustomed, or to that which he left when he became ill, unless it is a peculiarly dangerous one for this disease.

Histologic Changes in Hodgkin's Disease.—F. Eve, in the *Practitioner*, states that the histologic changes in Hodgkin's disease are in the connective tissue framework and in the endothelial elements of the gland; and the diagnostic features are thickening of the stroma, with the presence of large multinucleated cells, and of cells rich in eosinophil granules; whereas in primary malignant disease a small round or lymphosarcoma is found, originating from the adenoid tissue, or a round or spindle-celled sarcoma arising from the stroma. Occasionally tuberculous glands present after removal the same pink homogeneous section as lymphadenomatous glands, and show no macroscopic evidence of caseation. Their nature can only be determined with the microscope.

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SATURDAY, APRIL 29, 1911

THE LOST ARTS

We are sometimes made to feel humble in the midst of our triumphal march of progress, by being told that in the ancient civilizations men did many things better than we do them now, and that at the best we ought to recognize that what we consider discoveries are mostly but rediscoveries. Probably we need this sort of corrective to self-satisfaction; nevertheless, it seems likely that modern iconoclasts will destroy its efficiency. "The lost arts" is a catch-word by which we set great store, and according to Dr. W. D. Richardson[1] its popularity in this country rests largely on the prominence given it by Wendell Phillips in his lecture on this topic, which he repeated two thousand times, more or less, in lyceum courses all over the country. Dr. Richardson examines the evidence on which rest the claims of unusual chemical achievements by the ancients, and finds it worthless.

The ceramic arts, it is true, did yield products at certain times which were not duplicated later, but it was not the art but the materials which were lost, for the results obtained by the potter depend in large measure on the particular clays he has to work with, and when a certain supply of clay gave out, a particular form of pottery might be discontinued. Fabulous tales of glass, with unequaled beauty and unbelievable ductility and malleability, are of wide popularity. To be sure, the ancients did make a sort of glass, opaque or translucent, often possessed of great beauty from the standpoint of the fine arts; but when it became possible to make a good transparent product the imperfect if more beautiful form lost its market and ceased to be made. Recently the interest in objects of art made of opaque and translucent glass has revived, and this glass is again being manufactured, but the art of making it was never entirely lost. So, too, the stories of marvelous cements, plasters, dyes and pigments, vastly superior to anything now available, are found on examination to possess no truth.

We must always remember that only the best examples of the materials used by the ancients can now exist; it is not at all fair to judge their entire work by these exceptional specimens. As we have pointed out in these columns before,[2] the reputed lost art of embalming, as performed by the ancient Egyptians, was nothing more marvelous than simple pickling in a brine of common salt; its wonderful efficiency was contributed by the dry climate in which the bodies were left. The oft-repeated statement that the same people filled carious teeth with gold according to the most modern practice, is also a myth. The building of the pyramids involved no preternatural knowledge of mechanics, but simply the inhuman use of myriads of slaves. Some arts, of course, depend on dexterity and manual skill, best transmitted by the personal training imparted by one artisan to another, rather than on scientific principles. If, therefore, the demand for the objects so produced becomes lessened, as by war, social disturbances, or change of customs, the arts may be forgotten. Real science, however, does not go backward, and to such extent as arts depend on science rather than on exceptional personalities, or on the continued maintenance of a high level of dexterity and skill, they cannot well be lost.

ANTIPLAGUE MEASURES

We have referred previously[1] to the outbreak of plague in Manchuria, which promised to be unusually severe and extended, and the death-rate of which was extremely high. On account of the appalling nature of the outbreak, the Chinese government was led to call for international assistance with a view to gaining control over the disease. Scientific studies of plague in a latitude so far north and under the conditions of life to be found there should be productive, and there should be elicited new facts regarding the epidemiology, especially of the pneumonic form of the disease.

Recent official reports and press dispatches indicate the marked diminution in the severity of the outbreak in North China, especially in those centers in which it first appeared. On account of the extension from those centers, however, new foci have been established, and it is safe to say that a wide territory is now affected, thus rendering more difficult the precautionary measures as to sanitation that have been inaugurated.

Notwithstanding the limited trade relations with ports in Manchuria and North China, some apprehension arose as to the possible dangers to our ports from such a severe epidemic, but the precautions taken in Manchuria itself by the Chinese government and other governmental agencies, and by railway officials and others interested, were undoubtedly a great protection to international shipping and particularly because the disease was of the pneumonic type. Besides, there is reliable authority for the belief that there was no infection of the rat population, which, when infected, constitutes the greatest danger to international commerce.

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[1] An address delivered before the American Chemical Society, Dec. 28, 1910, Science, April 7, 1911.

[2] May 16, 1908, p. 1610; April 15, 1911, p. 1110.

[1] Feb. 11, 1911, p. 45.

Additional precautions were also afforded through sanitary supervision of passenger and freight traffic by medical officers of the Public Health and Marine-Hospital Service stationed at the principal ports of China and Japan. The quarantine system of the Japanese government, on account of the location of that country in the line of transpacific ships from China to the United States, also serves as a barrier to the extension of epidemic diseases. With these precautions abroad, and the careful supervision maintained over arriving ships, their passengers and cargoes, as well as a campaign for the extermination of rats on all vessels at home ports, required under the national quarantine regulations, there appears to be no likelihood of the introduction of the infection of plague as a result of the recent outbreak referred to.

The question arises as to the measures taken to prevent the spread of the infection that has been shown to exist on the Pacific coast. The last outbreak in California began Aug. 12, 1907, from which date to Jan. 30, 1908, there occurred in San Francisco 159 cases with seventy-seven deaths.

Were it not for the fact that the infection had secured a hold among ground-squirrels, all probability of further cases would have ceased, since the disease was eradicated from San Francisco and other bay cities. Those cities are now protected, however, by a squirrel-free zone established and maintained by the sanitary authorities interested.

The first infection among squirrels was found in August, 1908, which indicated that these rodents might serve as a potential agency in fostering the infection, and emphasized the necessity of a systematic and vigorous campaign for their extermination. According to the weekly Public Health Reports, this work has been carried on with the view to the destruction of known foci of infection, determination of the extent of the area of infection and general squirrel extermination.[2]

That the plague-suppression measures have been extensive is shown by the fact that since July 1, 1908, they have cost the federal government approximately $800,000, and the State of California not less than $500,000. Until March 4, 1911, there had been collected 992,247 rodents, 937 of which were found to be infected. Squirrels have been collected over a considerable area of the State of California, and the area of infection appears to be definitely determined. In addition to the maintenance of the squirrel-free zone mentioned, the work carried on includes the destruction of known foci of infection, and the work of squirrel extermination is becoming general, being actively carried on in ten counties.

While the work is being conducted by an officer of the Public Health and Marine-Hospital Service in cooperation with state and local health authorities, much is being done by ranch-owners and farmers, and county authorities are aiding extensively by the appropriation of money and the employment of inspectors.

From the character and extent of the work done and the plans for its continuance, the plague situation on the Pacific coast should cease to be a menace; but the problem of squirrel extermination is a large one, and there is necessity of a clear understanding on the part of the public, not only of the difficulties involved, but of the strenuous measures that have been taken. Those having charge of this work not only should be provided with ample funds, but should also be supported by an enlightened public opinion.

EXPERIMENTAL TUBERCULOUS REINFECTION AND ITS BEARING ON HUMAN TUBERCULOSIS

In a series of experiments, Römer and Joseph[1] show that in guinea-pigs and sheep a preexisting tuberculosis protects wholly or in part against a later experimental infection. The procedure in general is briefly as follows: An emulsion of tubercle bacilli in physiologic salt solution is penciled over a short incision in the skin of guinea-pigs which some time previously have been infected with tubercle bacilli subcutaneously. Guinea-pigs which were healthy, except so far as the incision and its treatment were concerned, served as controls. Various experiments like this modified in different ways gave the same results. The previously tuberculous pigs were completely immune to cutaneous reinfection, and the wounds made in the skin for the purpose of reinfection healed promptly, whereas the control animals died from disseminated tuberculosis. Guinea-pigs were also immune to reinfection when the bacilli used in the experiments were obtained directly from the organs of tuberculous animals. Experiments on sheep gave the same results as those on guinea-pigs, the reinfected sheep being wholly immune to quantities of bacilli which in control animals caused death from wide-spread pulmonary tuberculosis in the course of eight weeks.

Now it is generally assumed and believed that in man the resistance to tuberculosis increases with age. The young are especially prone to tuberculous infection, only too often of a progressive type running a rapid course. It is usually said that in the very young there exists a physiologic state or "disposition" which renders them more susceptible to infection and less resistant than adults. This predisposition is regarded as specially marked in the children of tuberculous parents. Such children are exposed very freely to infection because of the close contact in which they are placed with those about them and this may explain in part at any rate the apparent increased susceptibility. It may be noted that experiments with the young of tuberculous animals do not appear to indicate that there is any special susceptibility to tuberculosis in them. The large percentage of positive tuberculin reactions in children points unmistakably in the direction indicated, namely, the ease with which infection occurs early in life. Indeed, it seems not improbable that, at least in the large cities, almost every person is infected with tuberculosis by the time he reaches puberty. Hence it lies near at hand to conclude that the increasing resistance to tuberculosis as age advances may be largely the result of infection with tubercle bacilli early in life.

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[2] Public Health Reports, April 21, 1911.

[1] Römer and Joseph: Beitr. z. Klin. d. Tuberk., 1910, xviii, 281.

In the struggle now waged everywhere against tuberculosis the efforts are not always directed toward the point where most effective progress might be achieved. Thus, it should always be borne in mind that in the adult the susceptibility is relatively less than in the young. It is the child that we should aim to protect by all means and especially against the most dangerous sources of infection, namely, the constant association with the tuberculous.

Current Comment

PUBLIC HEALTH PERSONNEL BILLS

Two bills,[1] S. 1182 and H. R. 5599, which deserve the cordial support of those interested in increasing the efficiency of the federal health agencies, have been recently introduced into Congress, one by Senator Owen and one by Representative Charles G. Edwards. These measures relate entirely to the personnel of the Public Health and Marine-Hospital Service and are designed to make that service more attractive to young medical men. While varying in phraseology, the bills have in view the same object—increase in pay. For over a century there have been three national medical services—the Army, the Navy and the Public Health and Marine-Hospital Service—and the requirements for admission to all have been equally exacting. In 1871, the Marine-Hospital Service was organized on its present basis and the appointments and promotions therein were placed on the merit system. In 1889, the pay of its officers was placed on a parity with that of the other medical corps, but in 1908, when the pay of the Army and the Navy medical corps was materially increased, that of the Public Health and Marine-Hospital Service was not similarly raised. The annual salary of a physician entering the Navy at the present, for example, is within $45 of that of one who has been in the Public Health and Marine-Hospital Service for fourteen years. As a result, it is difficult to retain the best men in the service and almost impossible to recruit its ranks with men of proper qualifications. The present bills are designed to overcome these difficulties by more nearly equalizing the pay of the three services. The officers of the Army and Navy receive certain allowances and perquisites which are not contemplated for those of the public health service, so that on the whole the pay of the former would continue somewhat higher. The proposed increased pay in the public health service, however, would doubtless attract a class of young physicians who prefer a civilian to a military career. Within the last few years Congress has repeatedly recognized the justice and necessity of such legislation as is now proposed; in fact every provision of the Edwards bill has at one time or another passed either the Senate or the House of Representatives; but the question of pay, unfortunately, has become so involved in questions of function that bills passing one house have not been acceptable to the other. Thus some members of Congress have opposed all bills for increased pay which did not impose additional duties, while others have not favored bills providing for increased function on the ground that their passage would imperil the chances for a federal department of health. It is to be hoped that this question will be considered solely on its merits, as all interested in public health work, in or out of Congress, agree as to the need and justice of increasing the pay of the officers of the public health service.

OPIUM-CONTAINING PROPRIETARIES

In the "Propaganda for Reform" department of this issue, appears a report of the Council on Pharmacy and Chemistry on a proprietary product called Pantopon and a contribution from the chemical laboratory on another proprietary—Papine. While both are opium preparations—that is, owe their chief or entire activity to morphin—there the resemblance ceases. Papine, according to our chemists, is merely a solution of morphin. The manufacturer, a typical St. Louis proprietary firm, claims for this preparation the impossible, namely, that it contains morphin minus morphin's harmful properties; and the unthinking physician is thus led to prescribe morphin recklessly and without due consideration of its dangers. Pantopon, on the other hand, is made by a firm whose products, in a number of cases, have been accepted by the Council for inclusion with New and Nonofficial Remedies. The composition of Pantopon is not secret, for it is definitely stated that it consists of the alkaloids which naturally occur in opium, freed from the other constituents of opium—extractive matter, etc.—in the form of hydrochlorids. Papine and Pantopon, however, resemble each other in that they have names which do not sufficiently indicate to the physician their chief constituent, morphin, and they are, therefore, a menace to the public. In spite of the testimonials for both these products, we believe that physicians would not be far amiss if they would continue to use the drugs, morphin and opium, whose value—and dangers—they know.

SELF-SUPPORTING CRIPPLES

The compensation of workmen in factories and other industries for injuries sustained in the line of their work is a live question at the present time. Many European countries for years have had laws concerning employers' liability and workmen's compensation. A step further in this humanitarian line is the education of persons prevented from following their former occupation or trade by reason of injury. This is accomplished by the establishment of schools wherein such persons are taught various trades by which they may earn a livelihood, even in their crippled condition. At Charleroi, France, at the instigation of Pastur and Caty,[1] a school has been established for this purpose. Among the trades taught to people injured in the industrial establishments of this manufacturing city are brush-making, the making of paper boxes, turning, binding, stenography and typewriting, drawing and other forms of manual training. The trade which the crippled individual must take up is, of course, governed in a measure by the nature of the injury; for instance, individuals crippled in the legs would follow occupations allowing them to sit at their work. In one case described in the article referred to, a man with both arms amputated near the shoulder, by means of a mechanical appliance about his neck, follows the trade of a wood-turner. In another instance, an individual with both hands gone was enabled to make brushes. The many occupations which may be followed by the blind are more or less familiar. Similar schools are conducted in other places, at present mostly through private philanthropy. There is no reason why such schools should not be supported by the state: this undoubtedly will be a development of the future, following the securing of efficient employers' liability and workmen's compensation acts.

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[1] Reprinted in Miscellany Department, this issue, page 1279.

[1] Presse Médicale, Feb. 18, 1911.

UNIVERSITIES AS OBJECT-LESSONS IN HYGIENE

"Preventive medicine is the cheapest life-insurance which can be taken out." With this sentence Ravenel and Frost of the hygienic committee of the University of Wisconsin conclude an admirable paper in this issue on "The Formation and Functions of Hygienic Committees for Universities," which gives a history of the formation of the committee on hygiene of the university and its achievements. The need for such a committee in this instance is abundantly shown. Conditions in the University of Wisconsin are probably representative of conditions to be found in many other universities and in smaller schools as well. The worth of the paper lies not so much in the statement of the good accomplished in this one school, as in the admirable scheme of investigation employed and the measures adopted for bettering the hygienic conditions of the buildings and health of the students, which may serve as a model. Their studies have brought them to the following conclusion: "Schools, colleges and universities ought to lead in sanitary construction, sanitary equipment and sanitary care. Class-rooms and laboratories ought to be models of sanitary excellence as well as of convenience and attractiveness. The educational value of such buildings far outweighs any additional expense involved." It might be added that the lessons of this paper would apply with still greater force to industrial establishments employing large numbers of men and women, with longer hours and more exacting conditions than in the schools; and the sentence first quoted might be changed to read, "Preventive medicine is the cheapest industrial insurance which can be taken out."

THE SCOPE OF THE NEXT PHARMACOPEIA

Although the Committee on Revision of the United States Pharmacopeia was appointed nearly a year ago, it has issued no report to show what progress is being made. While there are doubtless good reasons why no such report has been published, the committee should realize that the medical profession is interested as never before in the question of what should be added to, or deleted from, the next edition of the Pharmacopeia. It may not be amiss to point out that physicians frequently accept at their face value claims made by interested persons regarding the therapeutic action of certain drugs. This applies to both proprietary and non-proprietary articles. There is a tendency on the part of certain doctors to prescribe such drugs, even after they have been shown to be worthless, especially if the preparations have been admitted to the official standards and consequently included in text-books. An example of the official recognition — not pharmacopeial — of a valueless preparation is that mixture of pepsin and pancreatin known as Elixir Digestivum Compositum, N.F. A formula for this preparation was put in the National Formulary because of the very extensive use of a nostrum widely exploited with most extravagant and untruthful claims. This nostrum has been and is widely used, not because it is of any therapeutic value, but simply and solely because it has been extensively and extravagantly advertised. It is well known that liquid preparations of pepsin and pancreatin are therapeutic absurdities and chemical impossibilities. So, while a drug may be widely used, it does not necessarily follow that it is of any value whatever. Many text-books contain recommendations for the use of drugs simply because some other text-book recommended them, not because they are of any value. It is to be hoped that those who select the articles to be included in the next Pharmacopeia will have some other basis for inclusion than the mere fact that they are being used. If the Pharmacopeia is to be a scientific treatise on drugs, and is to enlist and keep the respect of the medical profession, the adoption of some other standard becomes inevitable.

Medical News

ALABAMA

Tag Day in Montgomery.—The Young Ladies' Auxiliary of the Montgomery Antituberculosis League will hold a Tag Day, April 29, the proceeds to be devoted to the purchase of a site for a day camp for tuberculous patients.

Antituberculosis Society Election.—At the annual meeting of Jefferson County Antituberculosis Association, held in Birmingham, April 16, Dr. Benjamin L. Wyman was elected first vice-president, and Drs. Cabot Lull and Cunningham Wilson were elected directors. By the efforts of the association, a tuberculosis camp has been established on Red Mountain. The most recent addition to the camp is a dining room pavilion just completed which will accommodate seventy-five patients.

Personal.—Dr. James T. Fowler, Dothan, has succeeded Dr. Edgar R. Burns, Sheffield, as medical member of the State Convict Board.——Dr. George I. DeWald, state bacteriologist, has resigned and will resume practice at his home in Philadelphia.——Dr. Jackson T. Brown, Riverside, has been appointed road commissioner of St. Clair County.——The residence of Dr. James T. Searcy on the State Hospital grounds, Tuscaloosa, was destroyed by fire, March 5.

ARKANSAS

State Society Meeting.—The annual meeting of the Arkansas Medical Society will be held in Fort Smith, May 9-12, under the auspices of the Sebastian County Medical Society.

Sanitarium Established.—A number of physicians of Missouri and Kansas have united in the organization of a sanitarium company at Sulphur Springs. The building is a five-story, stone structure containing 100 rooms with modern equipment; is situated in a well kept park of 40 acres, which contains also an 8-acre lake and five mineral springs. Dr. J. Morse Griffin is president of the company, and Dr. Edward R. Tenney, medical superintendent.

Needs of the Sanatorium.—After meeting with the board of trustees of the State Tuberculosis Sanatorium, the joint committee of the legislature has decided to ask for an appropriation of $25,000 for construction work, and of $60,000 for maintenance of the institution for two years. The sanatorium at present accommodates seventy patients, but with the infirmary and additional quarters proposed, the capacity will be increased to 100. The cost of maintenance is estimated at $600 per annum per patient.——A bill has passed the senate appropriating $85,000 for a state tuberculosis sanatorium and the bill is at present pending in the house with fair prospects of passage.

CALIFORNIA

Personal.—Dr. Addison Morgan, San Diego, has been appointed autopsy physician to the coroner of San Diego County. ——Dr. Annette Buckel, Piedmont, was the guest of honor at a banquet of the Professional Women's League, Oakland, March 21.

State Society Meeting.—At the annual meeting of the Medical Society of the State of California, held in Santa Barbara, April 18 and 19, Del Monte was chosen as place of meeting in 1912. The following officers were elected: Dr. Thomas W. Huntington, San Francisco, president; Drs. Charles S. Stoddard, Santa Barbara, and John R. Walker, Fresno, vice-presidents; and Dr. Philip Mills Jones, San Francisco, secretary-treasurer (reelected).

COLORADO

Ball for Nurses.—The first annual ball of the Denver Visiting Nurses' Association was given April 18, and netted for the association about $1,000.

Hospitals in State.—The last report of the State Board of Charities and Corrections states that there are eighty-two hospitals in Colorado, of which twenty-two are private or semi-private institutions for the care of tuberculous patients.

Personal.—Dr. Mary E. Phelps, Canon City, has returned after a year abroad.——Dr. William C. Mitchell, Denver, has gone to Europe.——Dr. Richard S. Grant, Colorado Springs, was painfully injured in a runaway accident, April 4.—— Dr. Peter H. Heller, Pueblo, who has been ill in St. Mary's Hospital, has recovered and resumed work

Dispensary Will Build.—The Free Medical Dispensary, established six months ago under the direction of the North Denver Italian Mission, has been so successful that plans are now being made for the erection of a building to cost $20,000. About $7,000 of this amount has already been subscribed. The dispensary has treated so far more than 400 cases a month.

Consumptive Relief Society.—The Jewish Consumptive Relief Society, Edgewater, celebrated its seventh annual meeting, April 16, and laid the cornerstone of the second New York Ladies' Auxiliary Pavilion and the cornerstone of the Beth Jacob Synagogue, the gift of I. Solomon, Denver, in memory of his son. During the last year the society has spent $65,000 and now has a balance of $10,000 in the treasury.

DELAWARE

Wilmington Appoints Vaccine Physicians.—The city council has reelected the following vaccine physicians: Drs. John McGrath, Harry G. Buckmaster, Wilbur E. Postles and Harvey B. Patton.

Quarantined Immigrants Revolt.—About 200 immigrants, detained fourteen days in quarantine in Lewes because of an outbreak of small-pox on the steamship *Verona*, became vexed at the non-arrival of the steamship *Taormina*, which was expected to arrive April 14 and take them to Philadelphia, overpowered the few guards and marched to the Lewes railway station. They were refused tickets and were driven back to quarantine by armed guards, assisted by sailors from the United States Revenue Cutter *Onondaga*.

GEORGIA

Personal.—Drs. Josephus J. P. Bowdoin, Adairsville; Fred V. Turk, Stilesboro, and George Will Battle, Cassville, have been appointed members of the board of health of Bartow County. ——Dr. Philip H. Camas has been appointed medical inspector of the high school of Baxley.

Health Boards Organize.—The Association of State, County and Municipal Health Boards was organized at Rome, April 18, at a meeting of the Georgia Medical Association and the State Board of Health. Dr. James C. Bloomfield, Athens, was elected president; Dr. Olin H. Weaver, Macon, vice-president, and A. V. Wood, Brunswick, secretary.

State Society Meeting.—The Medical Association of Georgia held its annual meeting at Rome, April 19-21, under the presidency of Dr. Edward C. Davis, Atlanta. Augusta was selected as the next place of meeting, and the following officers were elected: president, Dr. William L. Fitts, Carrollton; vice-presidents, Drs. Robert M. Harbin, Rome, and T. E. Bradley, Cordele; secretary-treasurer, Dr. William C. Lyle, Augusta; delegate to the American Medical Association, Dr. William Doughty, Augusta, and alternate, Dr. Edgar G. Ballenger, Atlanta.

ILLINOIS

Asks New Hospital.—Several practitioners of Aurora have started a petition to Bishop Muldoon requesting that the Sisters of Mercy be allowed to erect a hospital on the west side, as the hospitals in Aurora and St. Charles are already overcrowded.

County Society Room Planned.—At a recent meeting of the Montgomery County Medical Society, it was proposed to have a room built on the east side of the Litchfield Hospital 20 by 26 feet to be used as a meeting place and clinic room for the society. The cost of the proposed addition is $2,000.

State Society Meeting.—The Illinois State Medical Society will hold its annual convention in Aurora, May 16-18. Dr. Herman A. Brennecke, chairman of the committee on accommodations, appreciates that accommodations at the hotels will be inadequate and is making early arrangements for accommodations in private houses. Those desiring accommodation should communicate with Dr. Brennecke.

Personal.—Dr. and Mrs. William H. Kauff, Princeton, have returned after a winter spent in Florida and the east.——Dr. William L. Gray has been elected president of the board of education of Champaign.——The office of Dr. James E. D. Silcox, Rio, was destroyed by fire, April 9, with a loss of $2,000, partially covered by insurance.——Dr. Edwin L. Winslow, Danville, has been reelected physician of Vermilion County.

Society Meetings.—At the meeting of Greene County Medical Society, held in Kane, March 10, resolutions were adopted respectfully requesting the legislature and governor to adopt such laws as will give to the state only high class medical schools, and also asking the legislature and governor to establish and maintain one educational standard and one medical examination, except in therapeutics, for all who are licensed to treat human disease, and endorsing the work done, and the standard of medical education adopted by the Council on Medical Education of the American Medical Association. Dr. Henry A. Chapin, White Hall, was elected delegate, and Dr. Henry W. Chapman, White Hall, alternate delegate to the state medical society.——At the annual meeting of the McLean County Medical Society, held in Bloomington, April 6, the following officers were elected: president, Dr. Robert A. Noble. Bloomington; vice-president, Dr. Ferd. C. McCormick, Normal; secretary-treasurer, Dr. Thomas D. Cantrell, Bloomington; censors, Drs. Edward L. Brown, John W. Dobson and Ralph D. Fox, all of Bloomington; delegate to the state society, Dr. Edwin P. Sloan, and alternate, Dr. Ernest B. Mammen, both of Bloomington.——At the annual meeting of Waukegan Physicians' Club, April 4, Dr. Fremont C. Knight was reelected president; Dr. William C. Bouton, vice-president, and Dr. Charles E. Daniels, secretary-treasurer.

Chicago

Bequest for Hospital.—The county judge at Kenosha has admitted to probate the will of the late Caroline Durkee, which devises the entire estate to St. Luke's Hospital, Chicago, and Racine College, Racine, Wis.

Personal.—Major Daniel W. Rogers, M. C., Ill., N. G., chief sanitary officer of the state, has been detailed for temporary duty at the maneuvers on the Mexican frontier.——Dr. and Mrs. Maurice L. Blatt sailed for Europe, April 27.

INDIANA

Health Officers to Meet.—Dr. John N. Hurty, Indianapolis, secretary of the State Board of Health, has issued summonses to all the county health commissioners in the state to attend the annual conference to be held at the Claypool Hotel, Indianapolis, May 9 and 10.

District Society Meeting.—The annual meeting of the Twelfth District Medical Society was held in Fort Wayne, April 12, and the following officers were elected: Dr. William F. Shumaker, Butler, president; Drs. Benjamin P. Weaver, Fort Wayne, and Lyman T. Rawles, Huntertown, vice-presidents; and Dr. Homer E. Glock, Fort Wayne, secretary-treasurer.

Personal.—Dr. Joseph Kentling, Smithville, while crossing the Monon tracks, was struck by a train but only slightly injured.——Dr. Philip E. Stockhardt, Elwood, has been adjudged of unsound mind and committed to the Eastern State Hospital, Richmond.——Dr. Lewis C. Griffith, Bowling Green, has been appointed health officer of Washington Township, vice Dr. T. Roy Cook, Bowling Green.——Dr. and Mrs. Thomas J. Bowles, Muncie, celebrated their golden wedding anniversary, April 14.

MARYLAND

Hospital Made Residuary Legatee.—By the will of the late Benjamin F. Chambers of Trenton, N. J., formerly of Cecil County, Union Hospital of Cecil County, Elkton, is made the residuary legatee and will receive about $60,000.

Decide on Jarrett Portrait.—At a meeting of the Baltimore County Medical Association, held in Towson, April 19, it was decided to have a portrait painted of Dr. James H. Jarrett, Towson, who graduated fifty-nine years ago, the portrait to be deposited with the Medical and Chirurgical Faculty of Maryland in Baltimore.

Annual Meeting of Society.—At the annual meeting of the Montgomery County Medical Society, April 20, the following officers were elected: President, Dr. James Dudley Morgan, Chevy Chase; vice-president, Dr. Frederick N. Henderson, Rockville; secretary-treasurer, Dr. John L. Lewis, Bethesda; censors, Drs. William T. Pratt, Potomac; Clayborne H. Mannar, Rockville; Vernon H. Dyson, Laytonsville, and delegate to the Medical and Chirurgical Faculty of Maryland, Dr. James E. Deets, Clarksburg.

State Sanatorium Report.—The fourth annual report of the Maryland Tuberculosis Sanatorium, founded in 1906, and located on the crest of the Blue Ridge Mountains, sixty-nine miles northwest of Baltimore, and established at a cost of $265,000, for white citizens in the incipient stage of tuberculosis, shows that during the year 574 patients ranging from seven to seventy-two years of age, were treated, the daily cost per capita being 95.3 cents. The beds were filled at all times, and there was a waiting list of from four to fifty. More than 500 patients have had to be refused annually. During the year 371 were discharged, 17 or 4.6 per cent. apparently cured; in 142 or 38.3 per cent., the progress of the disease was arrested; in 153 or 41.2 per cent. the condition of the patient improved; in 54 cases or 14.6 per cent., the condition of the patient remained unimproved; and 5 patients or 1.3 per cent. died. Of the patients, 102 remained less than ninety days, and 269 for a longer period. The after results in the case of 618 patients discharged since the opening of the institution in August, 1908, show that 36 are well, 271 are living and working; 173 are living and not working; 106 have died and the condition of 32 is unknown.

Baltimore

Personal.—Dr. Samuel C. Chew is suffering from a severe attack of influenza.——Dr. Jacob D. Norris, president of the board of police examiners, is seriously ill with heart disease.——Dr. Mary Sherwood has been elected president and Dr. Florence R. Sabin, corresponding secretary of the Just Government League.

Home for Physicians' Widows and Orphans.—At the second annual meeting of the board of managers of the Home for Widows and Orphans of Physicians, held April 18, the following officers were elected: president, Mrs. Eugene F. Cordell; vice-president, Mrs. Sophia Cooke Waters; recording secretary, Mrs. Augusta E. Fenton; corresponding secretary, Mrs. John G. Jeffers, and treasurer, Dr. Eugene F. Cordell.

MICHIGAN

Personal.—Dr. David J. Levy, Kalamazoo, has returned from Vienna.——Dr. Arthur R. Hayton, Shelby, suffered severe injuries of the face by an explosion of chemicals in his office recently.——Dr. Collins H. Johnston, Grand Rapids, has sailed for Europe.

State Board Nominations.—The governor sent the following nominations to the state senate, April 19, for places on the State Board of Registration in Medicine: Dr. Henry C. Maynard, Hartford, to succeed himself; Dr. Arthur M. Hume, Owosso, to succeed Dr. Flemming Carrow, Detroit; Dr. Bret Nottingham, Lansing, to succeed himself; Dr. Joseph A. Crowell, Iron Mountain, to succeed Dr. Theodore A. Felch, Ishpeming; and Dr. Austin W. Alvord, Battle Creek, to succeed himself.——Prof. Robert L. Dixon, Ann Arbor, has been nominated by the governor to succeed Dr. Frank W. Shumway, Lansing, as secretary of the State Board of Health.

Antituberculosis Work.—At the annual meeting of the Kalamazoo Antituberculosis Society, March 29, Dr. Herman Ostrander was elected president; Dr. John B. Jackson, secretary; and Dr. S. Rudolph Light, treasurer.——The Detroit Tuberculosis Sanatorium has received an anonymous gift of $5,000, which will provide for the perpetual endowment of one bed in the institution.——The Saginaw Antituberculosis Association has filed articles of incorporation.——Morgan Heights Sanatorium, the Marquette County Tuberculosis Hospital, situated about 7 miles west of Marquette on a high plateau, is practically completed and will be ready to receive patients in a few days.

Certified Milk Bill Passed.—After two years' effort, opposed by money dairymen who were selling milk which was not certified but which was claimed to be certified, the legislature has just passed a bill limiting the term certified milk to the high standard required by the committee appointed by the State Medical Society. This committee is composed of Drs. Collins H. Johnston, Grand Rapids; Marinus L. Holm, state bacteriologist, Lansing; Blanche N. Epler, Kalamazoo; Christopher G. Parnall, Jackson, and Thomas B. Cooley, Detroit. The bill was practically the same as the New Jersey law, except as to the method of selecting the commissioners who are now to be appointed by the local health boards if they have two physicians as members, otherwise by the state board. The bill "provides for the appointment and incorporation of medical milk commissions and the certification of milk produced under their supervision," and details the requirements.

MISSISSIPPI

Health Exhibit Campaign.—Dr. Waller S. Leathers, University, director of the public health and sanitation campaign of the State Board of Health, has received a letter from the Queen and Crescent System offering the board the use of two cars for the use of the health exhibit campaign throughout the state. Plans for the trip of the cars through Mississippi are now being formulated.

State Medical Society Meeting.—The annual meeting of the Mississippi State Medical Association was held in Jackson, April 11-13, under the presidency of Dr. John W. Young, Grenada, and the following officers were elected: president, Dr. Daniel J. Williams, Ellisville; vice-presidents, Drs. John T. Longino, Jonestown; Samuel E. Eason, New Albany, and John C. McNair, Fayette; secretary, Ewing F. Howard, Vicksburg; treasurer, Dr. Levi B. Sparkman, Cleveland; councilors, Drs. Sydney W. Johnston, Vicksburg; Charles M. Coker, Eden, and G. W. Wallace, Arbo. The association nominated the following five members as members of the State Board of Health to be appointed by the governor in 1912: Drs. John Darrington, Yazoo City; Giles S. Bryan, Amery; Elbert A. Cheek, Arcola; Theophilus E. Ross, Hattiesburg, and Inman W. Cooper, Newton. All of the nominees are members of the present state board.

NEW YORK

Personal.—Dr. Montgomery E. Leary has resigned as director of the Rochester Public Health Association after thirteen years' service. Dr. Leary will hereafter give his entire attention to his duties as superintendent of the Iola Sanitarium.——Dr. David H. MacKenzie, Millbrook, is reported to be seriously ill with disease of the gall-bladder in Sadlier Hospital, Poughkeepsie.

Hospital Gifts for Troy.—The Board of Directors of the Samaritan Hospital has received an offer from Miss Alida Van Schoonhoven of that city to erect and equip a memorial hospital.——George B. and Robert Cluett have also offered to erect and equip a new fireproof hospital complete. It is estimated that the two offers will involve the expenditure of more than $300,000.

Urges Restoration of Medical Library.—Albany County Medical Society, at its meeting, April 12, adopted a resolution calling the attention of the legislature to the great loss sustained in the destruction of the medical division of the New York State Library, when a section of the State Capitol was destroyed by fire recently, and asking that steps be taken to restore the library.

Approves Medical Experimentation.—The house of delegates of the Medical Society of the State of New York, on April 17, adopted a resolution declaring "that animal experimentation in this state is conducted in a proper and merciful manner, and that such experimentation is positively essential in medical progress; that unmerciful experimentation is not practiced in this state, and is prohibited by law," and opposing the bill which provides for a commission to investigate the practice of vivisection, on the ground that it is unnecessary and mischievous and calculated to hinder and cripple experimentation.

State Medical Society Meeting.—At the annual meeting of the Medical Society of the State of New York, held in Albany, April 18-20, the following officers were elected: president, Dr. Wendell C. Phillips, New York City; vice-presidents, Drs. Peter W. Van Peyma, Buffalo; William F. Campbell, Brooklyn, and Clifford. R. Hervey, Oswego; chairman of the committee on scientific work, Dr. Louis Neumann, New York City; chairman of the committee on legislation, Dr. Elliott T. Bush, Horseheads; chairman of the committee on arrangement, Dr. William J. Nellis, Albany; chairman of the committee on public health, Dr. Joshua M. Van Cott, Brooklyn; secretary, Dr. Wisner R. Townsend, New York City (reelected); treasurer, Dr. Alexander Lambert, New York City; delegates to the American Medical Association, Drs. Algernon T. Bristow, Brooklyn; James W. Fleming, Brooklyn; Edward W. Mulligan, Rochester; Henry L. Elsner, Syracuse; Edgar A. Vanderveer, Albany, and Edward E. Cornwall, Brooklyn.

New York City

Mount Sinai Hospital Purchases Property.—This institution has purchased two flat buildings in East Ninety-Ninth Street for the site of the proposed pathologic building made possible by the donation of $200,000 by Adolph Lewisohn.

More Meningitis Comes From Greece.—The Greek steamship *Athinai* brought to this port three more cases of cerebrospinal meningitis, making a total of thirty-five cases brought here from Greek ports within two months. There have been eighty cases detained at Quarantine this year with a mortality of 35 per cent.

Preparing to Fight Poliomyelitis.—Several physicians have prophesied an outbreak of infantile paralysis with the advent of warm weather. The health board is preparing to grapple with the disease as it has not done before. Hitherto the law has provided only for the reporting of cases, but if the virulence of the disease seems to warrant the action, the board of health will take charge of it. Two cases have been reported in the Bronx and six in Brooklyn since March 1.

Personal.—Drs. Henry Clarke Coe and Samuel M. Brickner, who were operated on recently for appendicitis, are convalescent.——Dr. William L. Russell, superintendent of the Long Island State Hospital, and for a number of years medical inspector of the New York State Commission in Lunacy, has been elected by the board of governors of New York Hospitals superintendent of the Bloomingdale Hospital, White Plains, vice Dr. Samuel B. Lyon, who will retire July 1 after twenty-five years' service.

Buffalo

Personal.—Dr. Charles S. Meahl has been appointed sanitary expert to the department of health.——Dr. Earl P. Lothrop has returned after a winter in Florida.

City Hospital Site Selected.—The aldermen have voted that the city purchase the West Farm site containing 81 acres for the proposed city general hospital for $225,000. The site has 1,500 feet frontage on Delevan Avenue, and 2,800 feet on Grider Street.

Higher Requirements.—On April 10 the new pathologic and chemical laboratories of the University of Buffalo were inspected by the Erie County Medical Society. The regular meeting of the society was held at the medical school. At the suggestion of the faculty of the medical school, a resolution was passed, recommending that the Medical Society of the State of New York urge that one year of college work be required of medical students for entrance, and a fifth year in a hospital of all graduates.

NORTH DAKOTA

State Association Meeting.—The annual meeting of the North Dakota State Medical Association will be held in Fargo, May 9 and 10.

Personal.—Dr. Archibald L. McDonald, Grand Forks, professor of anatomy in the University of North Dakota College of Medicine, will, it is reported, sever his connection with the institution at the close of the present year and will devote his entire attention to private practice. He will still be a special lecturer on the medical faculty.——Dr. Roy W. Pense has been appointed health officer of Minot.——Dr. F. A. Bordwell, Marmath, was seriously injured in a runaway accident near that place, April 17.——Dr. William C. Eichler, Underwood, has gone to Europe.

PENNSYLVANIA

Personal.—Dr. Charles H. Mann, president of the Bridgeport Board of Health, was recently injured in an automobile accident.——Drs. W. F. Krick of Philadelphia, a graduate of University of Pennsylvania; John J. Sosnowoski, of Mahanoy City, Jefferson Medical College; and Ward J. Brinton, Philadelphia, Jefferson Medical College, have been elected resident physicians of St. Joseph's Hospital, Reading.

Sanatorium Report.—Out of a total of 3,649 cases of tuberculosis, treated at Mount Alto Sanatorium for eighteen months, those in the moderately advanced stage of the disease number 1,382, and in the far advanced stage, 1,803, according to the report just issued. During this period out of 636 moderately advanced cases, discharged from the institution, 134 had the disease arrested and 375 were much improved. In the far advanced cases, 67 out of 780 had been greatly improved with the disease arrested, and 387 showed marked general improvement.

Philadelphia

New Hospital Society.—The physicians connected with the Jewish Hospital, have recently formed a clinical society and elected the following officers: president, Dr. Max H. Bochroch; vice-president, Dr. Jay C. Knipe; secretary and treasurer, Dr. Nate Ginsburg, and recorder, Dr. David Kapp.

Campaign Against Flies.—The public health committee of the Civic Club together with the health authorities will begin a crusade against flies and other harmful insects. Drs. James J. Bradley, Jr., Collin Foulkrod, Elizabeth Snyder and Edith E. Eayre will lecture in the settlement houses throughout the city, and the authorities will require all foodstuffs, such as meat, vegetables and milk, be properly screened and that all butchers and grocers keep their wares from infection from flies.

Gastroenterologists Meet.—The fourteenth annual meeting of the American Gastroenterological Association was held in Philadelphia, April 19-20. The following officers were elected: president, Dr. Walter B. Cannon of Boston; vice-presidents, Drs. John A. Lichty, Pittsburg, and William G. Morgan, Washington, D. C.; secretary and treasurer, Dr. Franklin W. White, Boston, and members of the council, Drs. Samuel J. Meltzer, New York; Charles D. Aaron, Detroit, and Julius Friedenwald, Baltimore.

Personal.—Dr. Jacques Loeb, of the Rockefeller Institute for Medical Research, delivered the address at the annual conversational meeting of the Pathological Society, April 27 His subject was "Fertilizing Effects of the Extracts of Tissues, Blood and Sperm." After the address a reception was given for Dr. Loeb at the University Club.——Prof. Svante Arrhenius, Stockholm, Sweden, will deliver the third Wei Mitchell Lecture of the College of Physicians in Mitchell Hall on May 16. The subject will be "The Passage of Micro organisms Through Interstellar Space: a Theory Bearing on the Origin of Life on a Planet."—Dr. Joseph S. Neff, director of public health and charities, has recovered and returned to his duties at city hall on April 18.——Professor Hugh Campbell Ross, director of research at the Royal Southern Hospital at Liverpool, and honorary clinical pathologist at the Royal Liverpool County Hospital for Children, will give a course of lectures during the coming month at Jefferson Medical College for the purpose of demonstrating new discoveries in the treatment of cancer.

SOUTH CAROLINA

County Association Meeting.—Edgefield County Medical Association held its annual meeting in Edgefield, March 29. Dr. John T. Hunter, Trenton, was elected president; Dr. George L. Walker, Johnston, vice-president, and Dr. John G. Edwards, Edgefield, secretary-treasurer.

Personal.—Dr. Charles F. Williams, Columbia, state health officer, has resigned, but the executive committee of the State Board has refused to consider the resignation.——Dr. John Cantzon Foster has been elected a member of the board of health and health officer of Lancaster.

State Society Meeting.—The South Carolina Medical Association held its sixty-third annual meeting in Charleston, April 18-20, under the presidency of Dr. James H. McIntosh, Columbia. The principal address was delivered by Drs. Alexander Lambert, New York City, and Judson Daland, Philadelphia. Columbia was selected as next place of meeting. The following officers were elected: president, Dr. J. Wilkinson Jervey, Greeneville; vice-presidents, Drs. Archibald E. Baker, Charleston; John H. Miller, Cross Hill, and Henry B. Lee, Summerville; secretary, Dr. Eagar A. Hines, Seneca (reelected); treasurer, Dr. Charles P. Aimar, Charleston (reelected); councilors, Drs. J. Taliaferro Taylor, Adams Run (reelected); Gottlob A. Neuffer, Abbeville, and Julius A. Faison, Bennettsville; and editor of the *Journal of the South Carolina Medical Association*, Dr. Julius C. Sosnowski, Charleston (reelected).

SOUTH DAKOTA

Personal.—Drs. Charles E. McCauley, Aberdeen, and William Lowe, Madison, have been appointed members of the State Board of Medical Examiners to succeed Drs. H. F. Bright, White Lake, and Alonzo A. Cotton, Vermilion.——G. G. Redfield, Rapid City, has been appointed a member of the State Board of Osteopathic Examiners, and Dr. Robert T. Dott, Salem, a member of the State Board of Health.——Dr. and Mrs. Frank I. Putnam, Sioux Falls, have returned from abroad.

District Society Meeting.—The Eighth (Yankton) District Medical Society held an interesting meeting at the State Health Laboratory, Vermilion, March 28, followed by a banquet furnished by the physicians of the city. The program included papers on "Infection and Immunity," by Dr. Harley E. French, Vermilion; "Present Status of Serum Therapy," by Dr. Philip R. Burkland, Vermilion; "Practical Use of Autogenous Vaccines," by Dr. Edward W. Meis, Sioux City, Ia.; "Practical Laboratory Methods in the Diagnosis and Treatment of Infectious Diseases," by Dr. Mortimer Herzberg, Vermilion; and "Hypodermic Medication in Specific Disease," by Dr. S. H. Richman, Yankton. The next meeting will be held in Pierre June 15-17.

TEXAS

Sanitary Code Prosecution.—The first prosecution under the new sanitary code law of the department of health is to be held at Waco. The alleged offender in the case is the registrar of vital statistics at Mart.

State Association Meeting.—The annual meeting of the State Medical Association of Texas will be held at Amarillo, May 9-11. One feature of the entertainment will be a barbecue and out-door feast at Palo Duro Canyon.

County Society Election.—At the annual meeting of Titus County Medical Society, held in Mount Pleasant, March 23, Dr. Albert A. Smith, Goolesboro, was elected president, and Dr. William H. Blythe, Mount Pleasant, secretary.

Tents for Tuberculosis Patients.—The board of health of Dallas has approved the plan of the local Red Cross for the erection of six tents on the city hospital grounds for the isolation and care of tuberculosis patients in the City Hospital, and the tents will be erected under the direction of city health officer, Dr. Thomas B. Fisher.

Northeast Texas Physicians Meet.—At the annual meeting of the Northeast Texas District Medical Association, held in Fort Worth, April 11 and 12, Dr. Joseph H. McCracken, Mineral Wells, was elected president; Dr. John H. McLean, Fort Worth, vice-president, and Dr. A. D. Patillo, Petrolia, secretary. The next meeting will be held at Mineral Wells.

Leprosarium.—It is announced that the state home for lepers provided for by an act of the thirty-first legislature will be established by Governor Colquitt. Dr. Manton M. Carrick has been appointed superintendent and a commission of three men, including the state health officer to be one, will be appointed immediately to locate the institution. An appropriation of $40,000 was made by the legislature for the purpose of establishing the institution and maintaining it until August 31.

UTAH

Resolutions Regarding Dr. Carnahan.—Weber County Medical Society, at its regular meeting, April 19, adopted resolutions setting forth the high and honorable work done by the late Dr. John D. Carnahan, Ogden, a member of the society, presenting a sketch of his life and deploring his death.

Amendment to Medical Practice Act.—Utah has just secured legislation providing important amendments to its medical practice act. Among other things, the new act provides for higher standards of preliminary education, revocation of licenses for unprofessional conduct and a better definition of the practice of medicine.

VERMONT

Drinking Cups Prohibited.—The first quarterly bulletin of the State Board of Health for the year contains a copy of the regulations adopted by the board, prohibiting the use of the common drinking cup in all public places, parks, fountains, school houses, factories, mills, workshops, libraries, public halls or other public buildings, railroad stations and railroad trains on and after May 1.

VIRGINIA

New Hospitals.—Drs. Robert C. Bryan and H. Stuart MacLean have approved plans for a hospital to be built at Grace and Monroe streets, Richmond, to cost about $60,000.——Dr. J. Shelton Horsley, Richmond, has under consideration plans for a private hospital to be erected at Pine and Grace streets.

Personal.—Dr. William A. Deas, Richmond, has resigned as physician to the Lee Camp Soldiers' Home.——Dr. George T. Myers, Norfolk, has been appointed medical assistant in the health department.——Dr. John J. Lloyd, Jr., Lynchburg, has succeeded Dr. W. E. Jennings as assistant resident physician at Catawba Sanatorium.——Dr. Clarence W. Cowper, Norfolk, appointed medical inspector of the health department, has resigned as alderman of that city.——Dr. Thomas F. Keen, Hamilton, announces his retirement from active practice.

WISCONSIN

Medical Press Board.—At a meeting of the Milwaukee County Medical Association, April 14, a board of censors, otherwise known as a press committee, was appointed, whose duty is to supervise, so far as possible, all articles appearing in the lay press relative to the medical profession or dealing with medical subjects.

Contagion and Eddyism.—The Milwaukee County Medical Society appointed a committee at a special meeting, April 16, "to investigate the attitude of the Christian Science church toward the practice of medicine with especial reference to the treatment of contagious diseases." It was reported that there were, on that day, fifty-three cases of scarlet fever in one ward of the city being treated by Eddyist healers.

Antituberculosis Society Meeting.—The new Wisconsin Antituberculosis Association held its meeting in Milwaukee, April 11, and elected officers. Dr. Harry Greenberg, Milwaukee, was elected chief of the medical staff. A fresh-air camp for tuberculous convalescents will be established on the Kern tract, the use of which has been given the society by the park board. Tents accommodating two patients each will be erected, and the camp will be known as the Social Workers' Tuberculosis Sanatorium.

Personal.—Dr. Clinton H. Lewis, Bayview, Milwaukee, sustained serious injuries of the head and back in a runaway accident, April 17.——Dr. Bernard C. Gudden was guest of honor at a banquet given by the Oshkosh Medical Club, April 14, in commemoration of the thirtieth anniversary of Dr. Gudden's entrance into practice of medicine in Oshkosh.——Dr. Richard J. Muenzner, Allenton, has been elected secretary of the American Medical Association of Vienna.——Dr. Charles R. Bardeen has been reelected president of the board of directors of the Madison General Hospital Association.——Dr. John M. Dodd has been elected mayor of Ashland.——Dr. James V. Canavan has been elected mayor of Appleton.

GENERAL NEWS

Confederate Surgeons to Meet.—The Association of Medical Officers of the Army and Navy of the Confederacy will hold its annual meeting at Little Rock, Ark., May 16-18, at the same time as the reunion of the United Confederate Veterans. Dr. Edwin D. Newton, Atlanta, Ga., is president, and Dr. A. A. Lyon, Nashville, Tenn., secretary of the association.

Therapeutic Program.—The twelfth annual meeting of the American Therapeutic Society will be held in Building "B," Harvard Medical School, Boston, May 11-13, under the presidency of Dr. Harvey W. Wiley, Washington, D. C. The subject of the presidential address will be "Bromato-Therapy," and the scientific program shows twenty-nine titles. The annual dinner will be given at the Hotel Vendome on the evening of May 12.

Travel Study Group.—Dr. Johannes Nietner, secretary of the permanent International Commission on Congresses of Hygiene and Demography, and secretary-general of the fourteenth congress, announces that a group of German physicians is planning a study tour in the United States in the summer of 1912 in connection with their visit to the coming congress, and that for the final arrangements, the group will send a representative to the United States in the autumn of this year.

Manila Physicians Meet.—The annual meeting of the Manila Medical Society was held in the Philippine General Hospital, January 9. The following officers were elected: president, Major Weston P. Chamberlain, M. C., U. S. Army; vice-president, Dr. Robert E. L. Newberne; editor, Dr. William E. Musgrave; acting editor, Dr. Vernon L. Andrews; secretary and associate editor, Dr. F. B. Bowman; treasurer and business manager, Dr. Harry D. Kneedler, and councilors, Drs. Musgrave and Andrews.

Alumni Meeting.—The annual dinner of the New England Alumni Association of the University of Vermont was held in Boston recently and was attended by about seventy-five alumni. Dr. Walter D. Williamson, Portland, Me., was toastmaster. The following alumni of the medical department were elected officers: president, Dr. Walter D. Williamson, Portland, Me.; vice-presidents, Drs. Frank W. Page, Boston, and Frank H. Clapp, North Grafton, Mass., and member of executive committee, Dr. C. Parker Holt, Cambridge, Mass.

Society of Tropical Medicine.—The eighth annual meeting of the American Society of Tropical Medicine will be held in Tulane University, New Orleans, May 18 and 19, under the presidency of Dr. William S. Thayer, Baltimore. The first scientific session will be devoted to papers on malaria, the afternoon session to leprosy and sprue. The morning session of the second day will be occupied by general discussion on amebiasis, and the afternoon to election of officers and papers on pellagra, yellow fever and miscellaneous subjects.

Alcohol and Drug Habits Studied.—The American Society for the Study of Alcohol and Other Narcotics held its fortieth annual meeting in Baltimore, April 19 and 20. The principal address was delivered by Dr. Winfield S. Hall, Chicago, on "Biological and Physiological Relations of Alcohol." The following officers were elected: president, Dr. Winfield S. Hall, Chicago; vice-president, Dr. Lewis D. Mason, Brooklyn; corresponding secretary and treasurer, Dr. Thomas D. Crothers, Hartford, Conn.; recording secretary, Dr. G. H. Benton, Doublinggap, Pa., and member of the executive committee, Dr. Thomas A. MacNicholl, New York City. Resolutions were adopted asking the government to use its influence to prevent the sale of opium in China.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, April 8, 1911.

A Public Health Museum

The National League for Physical Education and Improvement has proposed that the London memorial to the late King Edward, whose great interest in sanitary problems is well known, should take the form of a public health museum. In a recent conference of health-promoting institutions, a discussion on the need of coordination disclosed the existence of over eighty such national agencies in London and of a large number of local agencies in London and throughout the country. It was shown that these suffered much both in finance and work from overlapping, from separation of offices and staff, and from lack of coordination. The striking success of the tuberculosis exhibition opened in Dublin and then transferred to the Irish Village in the exhibition at London and to other places throughout the country, demonstrated the great interest taken by the public in sanitary questions. It is proposed to erect a popular museum which should accommodate a permanent collection and also furnish duplicate material for the equipment of traveling vans. It should be a model in constant and close relation with provincial museums to which it would probably give birth. It might also become a loan center for the distribution of replicas of its models and diagrams for circulation among schools and institutions. The building should also form a nucleus for the coordination of the various health-promoting institutions, both metropolitan and national. For this purpose, it should include the following: Two or three meeting halls of different sizes, ten or twelve committee rooms, central offices, a library and reading rooms, lecture rooms, workshop and draftsman's room. The cost of maintenance would be met, to some extent, by the rental of suites of offices, halls, committee rooms, especially by health-promoting conferences and institutions, and to some extent by small fees for courses of instruction. In the main, however, instruction must be given at a low cost, fees being charged only when they will guarantee greater interest in those who pay, and being reduced to such a level as will admit of the greatest possible use of the facilities provided. This would be sufficient grounds for appealing for subscriptions to trades unions, friendly societies, insurance companies and the general public. An appeal will be made for a memorial sum of $500,000 and a subscription of $25,000 a year as a minimum. The early co-operation of organizations of the working classes and of those working for the prevention of tuberculosis and alcoholism will be sought.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 14, 1911.

The Wassermann Reaction as a Means of Detecting Latent Syphilis

At a recent session of the Académie de médecine, Drs. Letulle and Bergeron read a paper based on the investigation of the Wassermann reaction in ninety patients affected with chronic diseases. There were thirty-nine positive reactions. This was to be expected among a large number of these where the patients were paraplegic and subjects of aortic lesions. Moreover, a positive reaction was obtained in subjects of chronic nephritis, non-tuberculous pulmonary diseases, cerebral or meningeal hemorrhages, etc. Among cases which came to autopsy (twelve) the existence of old or recent syphilitic lesions was ascertained.

The conclusion is that an almost absolute diagnostic value should be given to a positive Wassermann reaction; a negative reaction, however, does not prove that there is no syphilis.

Insufficiency of the Means Employed to Prevent a Drug from Dissolving in the Stomach

On April 7 Dr. Linossier of Vichy called the attention of the Association médicale des hôpitaux de Paris to a practical point of current therapeutics. To preserve a drug (pancreatin for example) which is soluble in gastric juice from contact with this liquid, as well as to avoid the irritating action of certain substances like potassium iodid on the stomach walls, it is customary to enclose these substances in an envelope which is not affected by the gastric juice; and it is supposed that the contents escape only when the envelope is digested by the pancreatic juice. These envelopes, which are usually made of gluten, keratin, or formalinized gelatin, are used to ascertain the strength of the pancreatic secretion. Now, while these envelopes resist the gastric juice, it is very easy to show that the soluble substances enclosed in them pass out by osmose from the time the capsule is swallowed, that is, very rapidly. On plunging commercial capsules of potassium iodid with keratinous or glutinous coating into gastric juice, or even into water, Dr. Linossier has seen reactions of iodin in the surrounding liquid appear in less than a minute. The use of such capsules to protect soluble substances from gastric juice is then altogether unsatisfactory. They may, however, protect an insoluble substance.

Prizes of the Society of Infant Hygiene

The Société d'hygiène de l'enfance has offered a prize for a paper on the following question: *Les cantines scolaires, leur utilité; que doivent-elles être?* (Public provision of lunches for school children: their utility; what ought they to be?). The manuscripts should be received before Dec. 31, 1911. They should be unpublished, written in French, German, English, Italian or Spanish. They should not be signed but each should bear a device or superscription reproduced on a sealed envelope containing the name and address of the author. The society reserves the right to draw from the best work materials for a pamphlet for propaganda and instruction. The papers should be addressed to the Président de la Société d'hygiène de l'enfance, 10, rue Saint-Antoine, Paris.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, April 7, 1911.

Personal

Prof. v. Eicken of Giessen has been appointed regular professor of otology, laryngology and rhinology. This is another instance, in a Prussian University, where a full professorship has been established to take the place of a special lectureship (*Extraordinariat*).

The Cremation Bill

As was to be expected and as I predicted, the bill for the permission of cremation was rejected by the committee of parliament, the vote being a tie. The eventual passage of the bill by a committee of the whole, in the house of delegates, is scarcely probable. owing to the lively objection of the center and conservatives, "the opposition."

Prolongation of Life

Professor Rahts of the imperial statistical office spoke March 24 before the society for insurance science on the prolongation of life, comparing the mortality of the German population with that of other civilized countries. Since 1871 the number of deaths in Germany has remained nearly constant, amounting to about 1,200,000 annually, although the population has risen from 41,000,000 to 65,000,000. The death-rate for 1871 was 30.6 per 1,000, that for 1909, only 18, a very marked reduction.

The estimation of the death-rate is fallacious, however, in comparing various cities of town and country. One must go back to the figures for the single age periods if he wishes to avoid mistakes in determining a relative death-rate. But this concerns only an ideal group of the population who have been subjected through their whole life to the mortality conditions that prevail in each decade. The average duration of life then shows how many years these groups of individuals have lived. Examination of the curves shows that the minimum and the maximum have not behaved in the same manner, but the minimum has sunk and the maximum risen, so that the mortality under 48 has become less, while that above 48 has grown larger. The typical duration of life in Germany is 71 years in men, 73 in women (in Norway 78 years), so that the saying of the psalmist, "The days of our years are three score years and ten." Psalm xc, still holds true. While this increase in the length of life is gratifying, it is in accord with that in other civilized countries, for in Sweden it has increased ten years, in Belgium and Holland 5, in England 3, in France 4, while only in Italy and Austria do the figures show only a trifling advance. If a comparison in percentages be made the figures for Germany are more favorable, showing an increase of 9.1 per cent. against 1.1 per cent in England. The reason for the slighter rise in Germany is the large infant mortality.

The average length of life is often taken as an index for the productive power of a people, but this is not quite correct because infants and the aged are included. Rahts has calculated the average for the productive period of life from 16 to 60 years and has shown that for this class the average length of life has increased one and three-fourths years from 1870 to 1900. As 1,200,000 enter their sixteenth year annually, this increase means an addition of 2,000,000 years of labor for the community, a gain that is largely due to the social legislation and the improvement in hygiene, so that these measures richly pay for the expense involved. Rahts then proceeds to consider the significance of the corrected figures and asserts that a population in vigorous growth gives different figures than a stationary population. The average duration of life is not sufficient to give a correct picture of the mortality rate, but it is necessary to have an estimate of the death liability. The vitality of a people reckoned from this figure shows how many are living for one death. Rahts reaches the conclusion that it has increased in every age class, rising rapidly in men and sinking again rapidly, while in women the curve is more gradual. This agrees with the results of observations by the medical school inspectors who have found that girls are more frail.

The curve of death liability in men follows a peculiar course: after a fall up to the thirteenth year there ensues a rise to the twenty-first, after which it remains stationary a few years and then rises again. As this peculiarity is found in France as well as in Germany, while in England the stationary period does not occur, it is probable that this stationary period is attributable to the salutary influence of enforced military service in France and Germany. If deaths from tuberculosis are excluded, the curve loses its peculiar character and becomes similar to that in women, so that it is possible also that the differing effect of tuberculosis on the two sexes is responsible.

The Census

According to the current data of the last census taken in 1910 the entire population of Germany was 64,896,881, an increase over the last census in 1905 of 4,255,603 (7.02 per cent.), which means a yearly increase for the German empire of 800,000. It is notable that there is a decrease in the excess of females in Germany. While in 1906 there were still 1,500,000 more women than men, in 1909 only 1,000,000 more women could be found and the census of 1910 shows an excess of females amounting to only 800,000.

VIENNA LETTER.

(From Our Regular Correspondent)

Vienna, April 1, 1911.

Statistics About Practitioners in Austria.

The official figures dealing with our profession are now accessible and their perusal affords a good insight into the prospects of the medical career in this country. The number of inhabitants at the end of 1910 was 28,000,000 in the Austrian part of the empire, which forms the subject of the official report. There were 13,202 licensed duly qualified medical men practicing, including about 1,250 military doctors who were compelled to do private practice also because there was no other doctor living in the district—which fact illustrates the paucity of doctors in some places. Since 1905 the population has increased by 4 per cent. and the number of practitioners by over 6 per cent. In the report the year 1887, when the present overproduction of doctors commenced, is taken as basis. The number of doctors has increased since that year by 76 per cent., but the population has increased only a little less than 30 per cent. At that time, the ratio of distribution of doctors was 1 for each 3,242 of the population. Now it is one doctor for 2,175. The highest increase was in the largest cities while in the country there is at present still a decided scarcity of medical men. The increase of doctors is also well illustrated by the figures concerning university pursuits of students. In 1887 the proportion of medical students was 30 per cent. of all university students; in 1895 it was over 40 per cent. The output of doctors by graduation was 5,075 from 1887 till 1895; from 1896 to 1905 it was 7,225. At the same time, however, the number of doctors who settled down and were practicing had increased by 4,500 only, indicating, either that the annual mortality of doctors, which is computed at 18 per cent., is much higher than calculated or, what is more likely, that a large number of graduated doctors preferred to give up the fight for a practice and either emigrated or turned to another occupation.

Hand in hand with the absolute increase of doctors, who do not see their way to live outside of the great towns, specialization has been favored in a very high degree with us. There are, for instance, 475 specialists in Vienna, and 200 in Prague, or in Vienna 16 per cent. of the doctors, in Prague over 25 per cent. have become specialists. These towns, however, are also university towns, where specialists are very frequent for obvious reasons. A large number of doctors practice in health resorts where they have only a season practice. In Karlsbad there are 163, in Meran 76, in Baden 53, in Marienbad 69, in Bozen 37 and Abbazia 36 doctors who live there for only part of the year. The number of these part-time practitioners has increased within five years by 18 per cent. Quite different are the figures pertaining to the local and territorial distribution of doctors. While in certain cities the proportion is exceedingly high, in the country districts the scarcity is alarming. For instance, in Olmütz, a town of 60,000 inhabitants, there is one doctor for each 390 inhabitants. In Trieste we find one to 1,010, while Vienna has one to 610, and Prague one to 560. On the other side, in lower Austria (one of the most cultivated countries of the empire) the figure is one to 2,030, in Styria it is one to 3,075, while the lowest figures are in Galicia, one to 10,000 inhabitants. In these latter countries it is evident that the poverty of the population and the low standard of life deter an educated man from settling down, unless he comes from this stock. There is only one possibility of subsisting—appointments which will furnish a maintenance. The payments are not very high, 1,000-3,000 kronen ($200-$600) per annum. Nevertheless, there was a fairly large number of such appointments vacant for a period of longer than two years because no man was willing to accept the post. Altogether, about 60 per cent. of all doctors hold one or other appointment with the state, the government or the *Krankenkasse* (sick club); while the remainder are satisfied with a strictly private practice. The number of female practitioners in Austria is eighty; seven years ago it was only ten, and they have settled down in towns only. Three are practicing in health resorts, and sixteen have appointments with the sick clubs of the laborers (*Arbeiter Krankenkasse*) for the female members. Only thirty-two school doctors have been reported as such at the end of 1910.

In this country we have three large provident societies of doctors, membership being compulsory in none of them. The number of members is 1,080, 740 and 3,200 respectively, and they provide sick pay for their members, varying between $1 and $2 per day, as well as a sum equal to about one-half dollar per member in case of death, so that the widow or the dependents receive at once a few hundred dollars. Of course, there are besides other but smaller societies with similar aims.

The average age of the doctor obtaining an M.D. diploma in this country is 27½ years; the average expectation of life is 53 in the country, 55 in cities; which also illustrates the worse conditions prevailing in the country. It is also interesting to note that doctors are not very fertile, the average number of children of practitioners being two. The reasons will here too be found in the low standard of income of an average doctor.

Marriages

Frank L. Truitt, M.D., Indianapolis, to Miss Maide Zulich, at Indianapolis, April 25.

Herbert A. Thomas, M.D., Lima, O., to Miss Annabel Alling of Warren, O., March 15.

Roy Whittier Porteus, M.D., Chicago, to Miss Edith S. Wells of Evanston, April 18.

Elmer Lee Henderson, M.D., Louisville, Ky., to Miss Laura B. Owen of Austin, Minn., at Springfield, Ky., April 4.

Jacolyn Van Vliet Manning, M.D., Manhattan, New York City, and Christian Sofian Ernest Spoerl of Wilkes-Barre, Pa., in New York City, March 22.

Deaths

Charles Stedman Bull, M.D., a prominent ophthalmologist of New York City, died in the Presbyterian Hospital in that city, April 17, from valvular heart disease, aged 66. He was graduated from the College of Physicians and Surgeons, New York City, in 1868, and then studied in Europe for ten years, devoting himself especially to ophthalmology, otology, and pathology. He was a member of the American Medical Association, American Ophthalmological Society (of which he was president from 1903 to 1907), New York Academy of Medicine, and New York Ophthalmological Society. He was assistant surgeon to the Manhattan Eye and Ear Hospital from 1871 to 1873, assistant surgeon and surgeon to the New York Eye and Ear Infirmary since 1871, a member of the visiting staff of Charity Hospital from 1875 to 1880, and consulting ophthalmic surgeon to the Presbyterian, St. Luke's and St. Mary's hospitals. Since 1898, Dr. Bull had been professor of ophthalmology in the Medical Department of Cornell University. He made many contributions to the literature of his specialty.

Edmond Robillard, M.D. Laval University, Montreal, 1847; Nestor of the medical profession of Canada; died at his home in Montreal, January 13, from cerebral hemorrhage, aged 86. in Montreal, January 13, from cerebral hemorrhage, aged 86. In 1859 he was elected one of the governors and examiners of the College of Physicians and Surgeons of Canada, and from 1868 to 1874, he was registrar of the college. Bishop's College, Lennoxville, Que., conferred on Dr. Robillard, in 1873, the *ad eundem* degree of doctor of medicine. The honorary degree of master of surgery was also conferred on him by the Medical Faculty of Victoria College, Coburg, Ont., in 1881. He was for many years a member of the Canadian Medical Association, in 1882 its treasurer, and a year later, he was elected vice-president. He was also chief inspector of lunatics for the Province of Quebec and one of the assessors of Bishop's College. From 1884 to 1900, Dr. Robillard lived in Paris returning to Montreal in the latter year.

James Bell, M.D. McGill University, Montreal, 1877; a famous surgeon of Canada; died in the Royal Victoria Hospital, Montreal, April 11, from pneumonia, aged 58. Dr. Bell was probably the best known surgeon of the Dominion, and a man of sterling worth. After his graduation, he became house surgeon of the Montreal General Hospital, was promoted to medical superintendent in 1881, was made assistant surgeon on the staff in 1885, and surgeon in the following year. On his appointment in 1894 as surgeon in chief to the Royal Victoria Hospital, he was elected consulting surgeon to the Montreal General Hospital. He was a member of the British Medical Association, Canadian Medical Association, American Surgical Association and American Association of Genito-Urinary Surgeons. In 1888, Dr. Bell was appointed associate professor of clinical surgery in his alma mater, was made assistant professor of surgery and clinical surgery two years later, and professor of clinical surgery in 1894.

Henry Lyman Shaw, M.D. Harvard Medical School, 1859; for many years a member of the American Medical Association; a member of the Massachusetts Medical Society, American Ophthalmological Society, American Otological Society, and American Association for the Advancement of Science; a district physician of Boston for five years; a pioneer oculist and aurist of Boston; from 1861 to 1864, assistant surgeon, and from that time until 1892 surgeon to the Massachusetts Charitable Eye and Ear Infirmary, and then a member of its consulting staff; died at his home in Boston, April 2, aged 73.

Rickard Thomas Styll, M.D. Medical College of Virginia, Richmond, 1877; a member of the Medical Society of Virginia, and president of the Newport News Medical Society; physician in charge of the Richmond Small-Pox and Fever Hospital in 1881; and of the Pinel Hospital in 1885 and 1886; from 1887 to 1896, resident physician of the Hollins Institute, and from 1896 to 1899, first assistant at the Central State Hospital, Petersburg; died at his home in Newport News, April 1, from cerebral hemorrhage, aged 57.

Edward Patrick Stanley Hart, M.D. Long Island College Hospital, Brooklyn, 1897; a member of the American Medical Association; assistant visiting surgeon to St. Francis Hospital, Jersey City; surgeon to the North Jersey Street Railway Company and United Electric Company; captain and assistant surgeon N. G., N. J., assigned to the Second Battalion, Fourth Regiment; for a time connected with the health department; died at his home in Jersey City, April 10, from pneumonia, aged 38.

Robert Rae, M.D. New York University, New York City, 1858; a member of the Medical Society of the State of New York, and at one time president of the Wyoming County Medical Society; for several terms coroner of Wyoming County; assistant surgeon of the First New York Dragoons during the Civil War; a member of the local board of pension examining surgeons; died at his home in Portageville, April 1, from cirrhosis of the liver, aged 76.

James Robert Zearing, M.D. Rush Medical College, 1850; surgeon of the Fifty-Seventh Illinois Volunteer Infantry and later chief surgeon of the Fourth Division, Fifteenth Army Corps serving throughout the Civil War; said to have been the oldest alumnus of Rush Medical College; who had been blind for twenty-five years; died at his home in Chicago, April 16, from cerebral hemorrhage, aged 81.

Christopher Charlton Oliver, M.D. Atlanta (Ga.) Medical College, 1867; a member of the Medical Association of the State of Alabama; a Confederate veteran, and state senator in 1901; formerly surgeon general on the staff of the Fourth Brigade, Ala. Confederate Veterans; local surgeon to the Louisville and Nashville Railway; died at his home in Calera, March 22, aged 64.

John Jacob Koser, M.D. University of Pennsylvania, Philadelphia, 1881; a member of the American Medical Association; treasurer and once president of the Cumberland Valley Medical Association; local surgeon to the Philadelphia and Reading and Western Maryland Railways; chief burgess of Shippensburg, Pa.; died at his home, April 13, from angina pectoris, aged 53.

Richard W. Reasoner, M. D. Medical College of Ohio, Cincinnati, 1883; aged 50; formerly president of the board of health of Morrisonville, Ill.; for the last ten years a resident of Colorado Springs, Colo.; was shot and instantly killed in that city in an attempted holdup, April 14, in which, however, he mortally wounded his assailant.

William H. Clutter, M.D. Cincinnati College of Medicine and Surgery, 1868; a member of the American Medical Association; a veteran of the Civil War; superintendent of health of Oklahoma City and physician of Oklahoma County; a pioneer practitioner of Oklahoma; died at his home in Oklahoma City, April 12, aged 78.

Joel Gilbert Justin, M.D. University of Pennsylvania, Philadelphia, 1875; instructor in chemistry and professor of medical jurisprudence in Syracuse (N. Y.) University from 1886 to 1890; died at his home in Castile, N. Y., March 27, from bronchitis, after an invalidism of eight years due to cerebral hemorrhage, aged 59.

William McMillan, M.D. Starling Medical College, Columbus, O.; assistant surgeon of the Ninth Ohio Volunteer Cavalry and surgeon of the Fifth Ohio Volunteer Cavalry throughout the Civil War; since 1879 an attorney; died at his home in Massillon, O., February 12, from senile debility, aged 77.

Eugene E. Whitaker, M.D. Long Island College Hospital, Brooklyn, 1881; for several years health officer, village trustee and school director of Newport, Vt.; once president of the State Homeopathic Medical Society; died in a hospital in Montreal, March 25, after a surgical operation, aged 62.

John Henry Sanborn, M.D. Berkshire Medical College, Pittsfield, Mass., 1852; for fifteen years city physician of Newport, R. I.; a veteran of the Civil War, and acting assistant surgeon, U. S. Army, for about twenty years thereafter; died at his home in Newport, April 2, from senile debility, aged 75.

Henry S. Wright, M.D. Atlanta (Ga.) Medical College, 1893; a member of the American Medical Association; at one time professor of obstetrics in the International Medical Missionary College, Atlanta; died in a sanitarium in that city, April 9, from cerebral hemorrhage, aged 53.

Adoniram Judson Clark, M.D. Keokuk (Ia.) Medical College, 1892; a member of the American Medical Association; for twenty-eight years a practitioner of Nebraska, and for several years coroner of Boone County; died at his home in Albion, April 11, from pneumonia, aged 59.

Adoniram Judson Wakefield, M.D. Harvard Medical School, 1855; a member of the Florida Medical Association; a surgeon of volunteers during the Civil War, and since that time a practitioner of Jacksonville; died in that city, March 28, from senile debility, aged 87.

Frank E. Kitzmiller, M.D. Fort Wayne (Ind.) College of Medicine, 1879; of Piqua, O.; a member of the American Medical Association; special small-pox expert for the State Board of Health; and health officer of Piqua for fifteen years; died at his home, March 27, aged 61.

John Robinson Hoskins, M.D. Jefferson Medical College, 1905; a member of the American Medical Association; died at his home in West Chester, Pa., April 6, from cerebral abscess following a suppurative mastoiditis, consequent on an attack of influenza, aged 30.

Henry Krollpfeiffer, M.D. College of Physicians and Surgeons, New York City, 1875; a member of the Medical Society of the State of New York; president of the New York Liederkranz for three terms; died in the German Hospital, New York City, April 12, aged 62.

Frederick Birdseye Baker, M.D. University of Maryland, Baltimore, 1888; a member of the American Medical Association; and of the staff of the Norwalk (Conn.) Hospital; died at his home in East Norwalk, April 18, from cerebral hemorrhage, aged 55.

Reuben Harmon, M.D. University of Wooster, Cleveland, 1881; Western Reserve University, Cleveland, 1882; of Onowa; formerly a member of the Iowa State Medical Society; died in Denver, Colo., January 12, from the effects of a fall down stairs, aged 64.

Henry St. Clair Ash, M.D. Pennsylvania Medical College, Gettysburg, 1850; of Philadelphia; a member of the Medical Society of the State of Pennsylvania; died in St. Joseph's Hospital, Philadelphia, April 6, from cerebral hemorrhage, aged 85.

Louis B. Craig, M.D. Missouri Medical College, St. Louis, 1879; formerly a member of the American Medical Association; a member of the Missouri State Medical Association; died at his home in Salem, April 9, from pneumonia, aged 58.

David Smith Williams, M.D. University of Nashville, Tenn., 1858; said to have been the oldest practitioner of Texarkana, Ark.; a surgeon in the Confederate service throughout the Civil War; died at his home, March 23, from influenza, aged 75.

Emory B. Johns, M.D. Chicago Homeopathic Medical College, 1886; of Lexington, Ky.; was found dead in a hotel in that city, April 6, from the effects of a drug believed to have been self-administered with suicidal intent, aged 66.

Joseph Alfred Beall, M.D. Hospital College of Medicine, Louisville, 1891; a member of the State Medical Association of Texas; local railway surgeon at Center Point; died at the home of his father in San Marcos, Dec. 11, 1910, aged 50.

Thomas Hamilton Gray, M.D. University of Michigan, Ann Arbor, 1871; a veteran of the Civil War; formerly a member of the Erie County (Pa.) Medical Society; died suddenly at his home in Erie, April 5, from rheumatism, aged 70.

William Covington Wall, M.D. Pennsylvania Medical College, Gettysburg, 186—; formerly a member of the DeSoto County (Miss.) Medical Society; died at his home in Hernando, July 2, 1910, from uremia, aged 73.

Hiram Harrison Miller, M. D. Medical College of Virginia, Richmond, 1861; a member of the Medical Society of Virginia, and a Confederate veteran; died at his home in Elkton, April 10, from cerebral hemorrhage, aged 73.

Charles A. O'Brien, M.D. St. Louis College of Physicians and Surgeons, 1897; of Fillmore, Ind.; formerly coroner of Putnam County; was found dead in Fillmore, April 7, from the effects of an overdose of chloral.

James Lewis Miller, M.D. Eclectic Medical Institute, Cincinnati, 1894; formerly of Providence, R. I.; a specialist on diseases of the eye, ear and throat; died at his home in Pendleton, Ore., Sept. 27, 1910.

George Gleason Sabin, M.D. University of Michigan, Ann Arbor, 1868; for thirty years a practitioner of Black River, N. Y.; a veteran of the Civil War; died at his home, March 28, from paralysis, aged 72.

Oliver Perry Piper, M.D. Jefferson Medical College, 1872; for fifteen years a practitioner of Schuylkill Haven, Pa.; and physician to the Schuylkill County Hospital; died in Harrisburg, March 17, aged 62.

Edward A. Flewellen, M.D. Jefferson Medical College, 1851; inspector of hospitals in the Confederate service during the Civil War; died at his home, The Rock, Ga., Dec. 9, 1910, from pneumonia, aged 93.

Telemachus N. Bennett, M.D. Kentucky School of Medicine, Louisville, 1893; for two terms deputy coroner of Marion County, Ind.; died at his home in Broad Ripple, April 12, from nephritis, aged 68.

Maria J. Cushing, M.D. New York Medical College and Hospital for Women; for many years a practitioner of Washington and New York City; died at her home in Lynn, Mass., April 9, aged 76.

Lucius A. Squires, M.D. Castleton (Vt.) Medical College, 1851; one of the oldest practitioners of Columbus County, Wis.; died at his home in Poynette, April 10, from paralysis, aged 86.

Edgar T. Walker, M.D. Tulane University, New Orleans, 1882; of Trinity, Tex.; local surgeon for the Missouri, Kansas and Texas Railway; died in San Angelo, Tex., March 31, aged 61.

William Munro Workman, M.D. Hahnemann Medical College, Chicago, 1883; a veteran of the Civil War; died at his home in Grand Junction, Ia., March 15, from heart disease, aged 68.

Rose DeL. Winters, M.D. Homeopathic Medical College of Missouri, St. Louis, 1900; of Kansas City, Mo.; died in Mercy Hospital, Clinton, Ia., February 16, from typhoid fever, aged 49.

Hugh L. Kimberlin, M.D. Kentucky School of Medicine, Louisville, 1852; a retired practitioner of Mitchell, Ind.; died at his home, Dec. 2, 1910, from chronic nephritis, aged 79.

Nathaniel P. Jelks, M.D. Bellevue Hospital Medical College, 1868; a member of the Medical Association of Georgia; died at his home in Hawkinsville, March 27, aged 65.

Howard Miller Taggart, M.D. University of Pennsylvania, Philadelphia, 1896; of Wilkes-Barre; died at a cottage on Wilkes-Barre Mountain, March 30, aged 44.

John Allen White, M.D. Tulane University, New Orleans, 1853; a Confederate veteran; died at his home in Huntsville, Tex., April 3, from senile debility, aged 81.

William D. Bell, M.D. Jefferson Medical College, 1855; a member of the Louisiana State Medical Society; died at his home in Lake Providence, April 9, aged 82.

John Perrie, M.D. Washington University, St. Louis, 1867; a Confederate veteran; of Mayview, Mo.; died in Eads, Colo., March 23, from peritonitis, aged 70.

Edmond James McLennan, M.D. Trinity Medical College, Toronto, 1890; died at his home in Medford, Okla., January 27, from heart disease, aged 46.

Alfred D. McMaster, M.D. Missouri Medical College, St. Louis, 1879; died at his home in Le Grand, Cal., January 26, from nephritis, aged 54.

Daniel Webster Camp, a practitioner of Wyalusing, Pa.; died at his home in that place, February 6, from valvular heart disease, aged 65.

Joseph W. Taylor, M.D. Memphis (Tenn.) Hospital Medical College, 1894; died at his home in Hickory Valley, Tenn., April 3, aged 38.

Joseph Fred Demers, M.D. Laval University, Quebec, 1894; died at his home in Levis, Que., Dec. 26, 1910, from typhoid fever, aged 39.

George Taylor, M.D. University of Louisville, Ky., 1910; died at his home in Kempton, Ill., April 1, from appendicitis, aged 23.

Elston Chamberlain, M.D. Rush Medical College, 1863; died at his home in Dallas, Tex., February 22, from pneumonia, aged 69.

Frank G. Osborne, M.D. University of Buffalo, N. Y., 1868; died suddenly at his home in East Aurora, N. Y., March 2, aged 66.

Allen V. Wright (years of practice, Tex.); died at his home in Corsicana, June 31, 1910, from nervous prostration, aged 71.

Diagnosis of Tuberculosis of the Breast.—This may give rise to much difficulty. The infection may remain localized to one portion of the breast, and give rise to a hard, painless mass. Eventually, softening occurs with the formation of subcutaneous abscess, and sinus formation of this may be delayed for some time.—H. M. Rigby, in the *Practitioner*.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession.

PANTOPON REJECTED

Report of the Council on Pharmacy and Chemistry

A referee of the Council reported that Pantopon was not eligible for inclusion with New and Nonofficial Remedies and recommended that the reasons for its rejection be published. The Council voted to adopt this recommendation and in accordance with its regular procedure the facts were reported to the manufacturers before publication. The firm's reply having been received, the Council authorized publication of the report which appears below.

W. A. Puckner, Secretary.

PANTOPON

Under this name, the Hoffmann-LaRoche Chemical Works submitted a pharmaceutical preparation of opium, consisting of a mixture of the hydrochlorids of the various opium alkaloids, as extracted directly from the drug, with more or less purification.

The Council holds that this name does not effectively suggest that the preparation is a mixture of opium alkaloids, as is required by the part of Rule 8 which reads:

> "In the case of pharmaceutical preparations or mixtures the trade-name must be so framed as to indicate the most potent ingredients."

and further explains:

> "It is particularly important that actively poisonous or habit-forming drugs be not disguised under an innocently worded title."

The Council maintains that the name "Pantopon" does not sufficiently protect the public against the habit-forming and other dangers inherent in such mixtures. The manufacturers, on being informed of these objections, offered to substitute the name "Omopon." As this is open to the same objections, it could not be accepted by the Council. After much correspondence, the manufacturers refused to consider any other name which would more definitely suggest its composition.

The Council is therefore forced to reject the product and has ordered the publication of this report.

Comment: This is a case in which the rules of the Council are in conflict with the views of the manufacturers and the Council is bound in consistency to stand by its rules, which are framed to protect the public and the profession. Pantopon is not a definite chemical body; but a mixture of known substances—the several alkaloids naturally occurring in opium—and the Council's rules require that such a preparation should bear a name indicative of its composition. The name "Pantopon" although it might suggest opium to those well acquainted with Greek would not do so to all and it would be relatively easy for physicians to fall into the habit of using it indiscriminately without realizing fully the character of the preparation, and the preparation thus becomes a menace to the public.

As to the merits of the preparation itself, it is remarkable what a literature has been built about a simple mixture of the opium alkaloids. The preparation is claimed to be superior to opium because it is more readily soluble. This trifling advantage seems to have been sufficient, however, to justify the publication of a dozen or more pamphlets. But in reality, this preparation is nothing more, therapeutically, *than a form of* opium and, therefore, should be known to the physician as opium. The reports made of its action seem to indicate a lack of critical sifting of the evidence. Notwithstanding *both its* source and the fact that experimental and clinical reports emphasize its close resemblance to opium and morphin, one author (H. Haymann, "Pantopon in der Psychiatrie," *Münch. med. Wchnschr.*, No. 43, 1910) remarks that a habit was not produced, inferring that something in the character of the preparation prevented the formation of such a habit.

The one thing to be kept in mind in considering the claims made in the literature for this preparation is that it represents opium and opium only and any statements of its superiority to opium must be read in the light of the well-known tendency of writers to exaggerate the virtues of proprietary substitutes for official substances.

PAPINE

A Disguised Morphin Solution

To the thinking physician it should be evident that a preparation containing morphin must possess not only all of the valuable properties of this drug, but also all of the objectionable ones. There are still some physicians, apparently, who give credence to the assertions of the manufacturers concerning a morphin preparation from which, it is claimed, all of the undesirable morphin effects have been removed. The following query from a correspondent illustrates this fact:

> "Will you inform me as to the contents of "Papine"? I have a case of chronic interstitial nephritis, and my consultant insists on giving this preparation. I asked him if he knew what drugs it contained and his answer was 'one-eighth of a grain of morphin with the objectionable parts of the drug removed.'"

The query was referred to the Association Laboratory, which submitted the following report:

For many years Papine has been advertised by its makers, Battle & Company, St. Louis, as an anodyne. In the circulars Papine is described in part as follows:

> "Papine represents in pharmaceutical form the purely anodyne principles of opium freed from the narcotic and tetanising constituents."
>
> "Papine is the anodyne or pain-relieving principle of opium; the narcotic and convulsive elements being eliminated. One fluid drachm is equal in anodyne power to one-eighth grain of morphin."
>
> "Through special methods of preparation, the anodyne and analgesic principles of *Papaver somniferum* are so extracted as to free them of the narcotic and convulsive elements that ever have been, and must ever continue to be serious objections to the use of opium and its common derivatives. . . . No demand is more regularly made on the physician than that for the relief of pain, and to be able to afford it promptly and completely, without the slightest deleterious action, is an advantage that cannot be overestimated."
>
> "Unlike most derivatives and preparations of opium, Papine neither nauseates nor constipates; nor does it inhibit the secretory functions of the body."
>
> "In conditions of extreme nervousness, especially in women, recourse to morphin is attended by the very real danger of the formation of a habit. Lastly, opium and its alkaloids must not be administered to persons whose kidneys are not in good working order on account of the risk of toxic accumulation."
>
> "No such restriction exists in respect of Papine, its action being exerted exclusively on the element pain; in other words, it is purely anodyne."
>
> "Papine does not nauseate, constipate nor create a habit."

From these statements the incautious physician might be led to infer that Papine is a preparation analogous or similar to the official tincture of deodorized opium. Formerly in the manufacture of the latter preparation, in addition to removal of the odorous substances, narcotin, then thought to be the principal convulsive alkaloid,[1] was also removed. By the process for the manufacture of this tincture, which is now official in the United States Pharmacopeia, most of the narcotine is found in the finished preparation. While it is a comparatively simple matter to remove the narcotin from opium and its preparations, thus eliminating most of the commonly reputed "convulsive elements,"[2] to remove the "narcotic elements" from opium would result in destroying the integrity of the product. The reasons for this are that morphin is the most powerfully narcotic substance found in opium, and it is present in the largest proportion of any of the alkaloidal constituents. Its removal from an opium preparation would, therefore, render that preparation practically valueless.

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[1] Narcotin is now known to possess very little physiologic effect.

[2] Of the opium alkaloids, laudanin and thebain possess the most powerfully tetanizing properties, but they are present in opium in too small quantities to produce any noticeable effect. Neither of these alkaloids is removed by the usual processes for "denarcotizing" opium.

From Papine, however, the morphin has not been removed, for *since the passage of the Food and Drugs Act* the label has to admit that Papine contains 1 grain of morphin in each ounce!

A specimen of Papine was examined[3] and found to be nothing more than a simple aqueous-alcoholic solution of morphin, containing glycerin. The preparation is flavored to imitate cherry and colored with cochineal. With the exception of morphin, neither narcotin, codein nor other opianic alkaloids were found, while meconic acid, a characteristic constituent of opium, was absent. Since Papine is claimed not to cause constipation, and as is well known, this condition is frequently produced by morphin, it seemed possible that Papine might contain laxative substances. On examination, however, neither cascara, rhubarb, phenolphthalein nor laxative salts were found.

While Battle & Co. have persistently exploited Papine as being an opium preparation having none of the objectionable qualities of opium, the analysis shows that the paradoxical claims made for it cannot be substantiated. In prescribing morphin there is an abundance of official preparations to choose from, and there certainly is no necessity or excuse for resorting to the much more expensive and in no way superior Papine.

Miscellany

Increase of Pay for Officers of the Public Health Service

Senator Owen has introduced the following bill, which appears on the Senate Calendar as S. 1182. It has been referred to the Committee on Public Health and National Quarantine:

A bill to promote the efficiency of the Public Health and Marine-Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the salary of the surgeon-general of the Public Health and Marine-Hospital Service shall be $6,000 per annum, and the salary of the assistant surgeon-general shall be $500 in addition to the pay and allowances of his grade; for the ten senior surgeons on the active list, $3.500; for surgeons, $3,000; for passed assistant surgeons, $2,400; for assistant surgeons, $2,000; and the longevity pay and allowances of the said commissioned medical officers shall be the same as now provided by law: *Provided*, That the retirement of the commissioned medical officers shall be the same as is now provided for medical officers of the Navy.

Another personnel bill has been introduced into the House of Representatives by Mr. Edwards. It appears on the House calendar as H. R. 5599, and is as follows:

A bill to promote the efficiency of the Public Health and Marine-Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter the salaries of the commissioned medical officers of the Public Health and Marine-Hospital Service of the United States shall be at the following rates per annum: surgeon-general, $6.000; assistant surgeon-general, $4,000; senior surgeon, in which grade there shall be ten in number on active duty, $3,500; surgeon, $3,000; passed assistant surgeon, $2,500; assistant surgeon $2,000; and the said officers, excepting the surgeon-general, shall receive an additional compensation of 10 per cent. of the annual salary as above set forth for each five years' service, but not to exceed in all 40 per cent.: *Provided*, That the total salary, including longevity increase, shall not exceed the following rates: assistant surgeon-general, $5,000; senior surgeon, $4,500; surgeon, $4,000.

When officers on active duty are not provided quarters, fuel and lights, they shall receive the same commutation therefor as now allowed medical officers of similar grades in the Navy: *Provided*, That officers while serving outside the boundaries of the continental United States shall receive an additional 10 per cent. of their salaries and increase while on such duty.

The allowance for baggage and personal effects to an officer in changing stations shall be fixed by the Secretary of the Treasury, not to exceed in any case 7,200 pounds.

Vacancies in the grade of senior surgeon shall be filled by promotion, after satisfactory examination, from the grade of surgeon and in the order of seniority of said grade; passed assistant surgeons shall be promoted to the grade of surgeon in the order of seniority at the expiration of twelve years' commissioned service and after satisfactory examination; assistant surgeons shall be promoted to the grade of passed assistant surgeon in order of seniority at the expiration of three years' commissioned service and after satisfactory examination.

Treatment of Gonorrhea.—N. E. Aronstam discusses the treatment of this disease as follows: The abortive plan of treatment is both painful and inefficient. To determine its value the microscope must be always consulted. There is no specific treatment for gonococcic urethritis and some of the much-lauded remedies are worthless, to say the least. Mechanical means, such as injections and irrigations, are apt to injure the urethral mucosa and cause extension of the gonorrheal process. The modern silver preparations, although efficacious and prompt in a number of cases in checking the purulent discharge, are not entirely devoid of danger, as complications are prone to develop in the course of such treatment. Rest is of paramount importance in the treatment of gonorrhea. Gonorrhea must always be regarded as a grave and far-reaching affection. The expectant plan of treatment, although not so prompt as the more rigid aggressive methods, is, however, devoid of all danger and the possibility of complications.—*Detroit Medical Journal.*

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[3] DETAILS OF ANALYSIS: Papine is a dark purplish liquid having a cherry-like odor and a sweetish taste. The specimen examined had a specific gravity at $\frac{25° C.}{25° C.}$ of 1.0565.

Qualitative tests indicated the presence of morphin, ethyl alcohol, glycerin and cochineal. Small amounts of a chlorid and traces of a sulphate were present. Acetates, lactates and sugars were absent.

Opium Constituents.—From the claims made for the preparation by the manufacturer, it might possibly be inferred that Papine is similar to the official tincture of deodorized opium. Accordingly, tests were made for opianic alkaloids other than morphin and for meconic acid. A portion of the specimen was dealcoholized, diluted with water and shaken with ether. The solvent was washed with water and portions evaporated. The residue from one portion of the solvent was very small; it was taken up in a small quantity of diluted hydrochloric acid and the solution filtered. On the addition of bromin to this solution, no precipitation took place, and on subsequent boiling the solution did not become rose-red. This was taken to indicate the absence of narcotin in Papine. The portion of dealcoholized Papine which had been shaken with ether was made alkaline with ammonia water and the mixture shaken with ether. The solvent was washed with water and shaken with diluted hydrochloric acid. The acid solution was made alkaline with ammonia, shaken with chloroform and the solvent evaporated. Only a very slight residue remained. This was subjected to the usual tests for codein, but with negative results.

A portion of the dealcoholized Papine was slightly acidified with hydrochloric acid and shaken with ether. The washed solvent was evaporated, the residue taken up with water and the solution treated with a drop of diluted ferric chlorid test solution. A red color was not produced. A portion of dealcoholized Papine was treated with a slight excess of lead acetate test solution, the precipitate washed with water, suspended in water and hydrogen sulphid passed in. The precipitated lead sulphid was removed by infiltration, the filtrate evaporated to a small bulk and treated with ferric chlorid test solution. No red color was produced. These tests indicated the absence of meconic acid. No odor similar to opium was observed at any stage of the examination.

As a check an aqueous extract of opium was prepared and subjected to the tests above described. A positive result was obtained in each case.

Laxative Substances.—A portion of the dealcoholized Papine was acidified with hydrochloric acid and shaken with ether. The washed solvent gave no red coloration on addition of ammonia water (absence of emodin and phenolphthalein). A small portion of the material was ignited. Only a trace of ash was given (absence of Epsom salts, Glauber's salt, etc.) These tests were taken to indicate the absence of the more common laxative substances.

Cochineal.—A portion of the dealcoholized specimen was slightly acidified with acetic acid shaken with amyl-alcohol, the solvent washed with water and shaken with a 1 per cent. solution of uranium nitrate. A deep green color was produced at once.

Chlorid.—Chlorid was determined as follows: Fifty c.c. were dealcoholized, diluted with 200 c.c. water, 10 c.c. nitric acid added, chlorid precipitated with silver nitrate, the precipitate collected, washed, dried, heated and weighed in the usual way. The results were calculated to crystallized morphin hydrochlorid ($C_{17}H_{19}NO_3.HCl + 3H_2O$) and to the equivalent of this salt in crystallized morphin ($C_{17}H_{19}NO_3 + H_2O$). From 50 c.c. of the solution 0.487 gm. silver chlorid was obtained; from a duplicate of 50 c.c. of the solution 0.481 gm. silver chlorid was obtained; average, 0.484 gm. silver chlorid. This is equivalent to 0.0968 gm. silver chlorid from each 100 c.c. of solution, or the equivalent of 0.2536 gm. crystallized morphin hydrochlorid in each 100 c.c. This quantity is equivalent to about 1.15 grain morphin hydrochlorid in each fluid ounce, or about 0.93 grain of crystallized morphin in each fluid ounce.

Since the label states that Papine contains 1 *grain of morphin* in each ounce, the findings from the chlorin determinations were taken to indicate that the morphin is present in the preparation combined as hydrochlorid.

Correspondence

Prevention of Pulmonary Tuberculosis

To the Editor:—In THE JOURNAL, April 22, 1911, page 1195, among "points which must not be forgotten," I should have been much gratified if you had mentioned the great importance of wearing a perforated zinc inhaler with suitable inhaling fluids, the best of these being equal parts of creosote, alcohol and spirits of chloroform. By the continuous and proper use of this fluid much can be effected in the way of prevention of the disease, not to speak of its very great value as a curative measure. To-day it is sad to note how little is done beyond mere sanitary regulations and hygienic régime to arrest the disease and cure an immense number of sufferers from tuberculosis; and practically nothing else is done to shield an equally large number of people *from contracting the disease.* For many years I have advocated strongly and frequently the value and importance of continuous antiseptic inhalations in pulmonary tuberculosis as a curative measure. I am equally impressed with its urgency as a protective measure, and especially with a vast majority who cannot go to sanatoriums or get the comforts and surroundings which wealth alone gives.

BEVERLEY ROBINSON, New York.

Hexamethylenamin in Pellagra

To the Editor:—In THE JOURNAL, Nov. 5, 1910, p. 1663, I reported a case of pellagra in which I treated the patient with hexamethylenamin. I stated results of the treatment, which were remarkable, although I had given the patient this treatment only a short time. The patient has continued to improve until she now feels perfectly well. By Christmas she had gained 40 pounds in weight, which she has held until the present time. When I began to treat her, I gave 45 grs. of hexamethylenamin every day for three weeks; then 30 grs. a day for one month. On account of the irritating effects on the bladder, I had to discontinue the drug only a few days during his time. During the winter and spring she has been taking 0 grs. a day for three days and missing three days. This is the only treatment she has taken since she has been under my care.

While one case proves nothing, yet the result in this case is so much better than any I have ever read of that I feel that I should report it. I hope that others, who have a number of cases, may try it.

B. B. BAGBY, M.D., West Point, Va.

Overcrowding in the Medical Profession in the West

To the Editor:—It might not be out of place to utter a caution to medical men contemplating settlement in the West. On account of the heavy expense incident thereto, any physician contemplating removal to the West should, if possible, make a trip first and look into matters closely before deciding.

The entire western country is very much congested with physicians of all kinds, and many of them, after spending a year or two in any of the western cities, will find their savings gone in the high cost of living and extortionate rents.

It must be remembered that many medical students in the West are constantly preparing to enter the profession in sufficient numbers to meet the demands of the increasing population.

DAVID H. LEWIS, Salt Lake City.

The Round-Ligament Operation

To the Editor:—In a recent issue of THE JOURNAL (Feb. 18, 1911, p. 481) is an article by Dr. J. M. Baldy entitled "Operation for Retrodisplacement of the Uterus." I desire to point out that the procedure described is exactly that which was first published by me in THE JOURNAL (Oct. 5, 1901).

I am highly gratified that Dr. Baldy advocates the operation so strongly in his paper; but, though he refers to "Webster, who has for the same length of time performed an operation with exactly the same principles"—his description is of such a character as to be very liable to give readers the impression that the operation is Dr. Baldy's invention.

This is not the first paper by him in which there is danger of similar misunderstanding. In the *New York Medical Journal* (April 14, 1906, p. 741), the same operation was described without the slightest reference to my share in originating it. I now consider that it is time to point out what Dr. Baldy has really done and to correct some misrepresentations.

In his recent paper the following sentences occur: "The operation is not new. I first referred to it in a paper in 1902." These statements are incorrect.

The operation was originally described by me in THE JOURNAL, Oct. 5, 1901, its essential features consisting in perforation of the broad ligaments, seizing the round ligaments with forceps and drawing them double under the utero-ovarian ligaments, and stitching them to the back of the uterus.

In Dr. Baldy's first paper (*Am. Jour. Obst.*, May, 1902, p. 650), seven months later, he commends the principle of my operation, criticizes my method of doubling back the round ligaments and there describes his own procedure, which he regards as an improvement, viz., *dividing the round ligaments close to the uterus and drawing them through the broad ligaments attaching them to the posterior surface of the uterus.*

Here, then, in clear language is Dr. Baldy's first published account.

I may say, in passing, that I carried out this procedure in a few cases several years ago, but abandoned it as unnecessary. Moreover, there is more liability to intestinal adhesions in connection with it, as some raw edges are apt to be left exposed.

Four years later Dr. Baldy published an article in the *New York Medical Journal* (April 14, 1906, p. 741) of a somewhat amazing character. I quote his own account:

"The *operation* which I am in the *habit of performing for* backward displacements of the uterus, and which is frequently designated *by my name*, is one which obtains its result *through* the use of the round ligaments. The broad ligaments are perforated from their posterior surface by forceps which, on emerging on the anterior surface, are made to grasp the round ligaments, which are then drawn through to the posterior surface with the forceps. The round ligaments are brought together and sutured both together and to the uterus. One who has not seen the result (of this operation) can have no conception of its completeness." Here is evidence of a complete change in the author's practice.

The operation which he lauds so highly is the very one which was described by me in 1901 and which was discarded by him in 1902. He has described my procedure as his own and has not even mentioned my name in the entire paper.

Again in 1909 (*Ann. Gynec. and Pediat.*, May, 1909, pp. 142-146) he describes the operation without any reference to me.

It is not pleasant to me to carry a grievance into print but I cannot remain silent while another claims credit which is not his due. My operation has been described as Dr. Baldy's in a foreign work by Hartmann of Paris, and I consider it time to interfere lest further misrepresentations should appear in medical literature. Moreover, I desire to make it clear that Dr. Baldy, having acknowledged the importance of the principle introduced by me in the surgical treatment of retrodisplacements, criticized my method of operation and recommended another procedure of obtaining the same result. He then abandoned the latter and after four years redescribed my original operation, praising it highly but giving me no credit for it. This line has been followed by Dr. Baldy in other papers to which I have referred, until the impression has been created in various quarters that he is the originator of the procedure.

J. CLARENCE WEBSTER, M.D., Chicago.

[This letter was referred to Dr. Baldy, who replies as follows:]

To the Editor:—A careful reading of Dr. Webster's letter will fail to elicit any false statement which he attributes to me. He makes a statement which is directly contrary to fact when he says that I have ever claimed priority, directly or indirectly. He quotes from two of my papers in which I give him full credit but, with apparent intention, he omits to say so, and he quotes an unimportant paper in which his name does not appear as proof of his claim that I pretend to priority. Dr. Webster seems to feel that the operation I described in 1902 is not the same as the one I am now doing. The operation which I described in 1902 consisted in "dividing the round ligaments close to the uterus, and drawing them through the broad ligaments attaching them to the posterior surface of the uterus." What I do now is to draw the round ligaments through the broad ligaments without cutting them, attaching them to each other, and, incidentally only, to the posterior surface of the uterus. Dr. Webster, so far as I can learn from those who have seen him operate, draws the round ligaments through the broad ligaments without cutting them, and attaches them to the posterior surface of the uterus. The principle of these three procedures is the same, and as Dr. Webster gives me credit for the first one, then I claim absolute credit for the second one, the one I am now doing and have done for some years. I have never seen it described by him nor has anyone who has seen him do the operation told me that he does it as I do it. The third method only is his; I claim the other two.

He brings the round ligaments through the broad ligaments, spreads them out over the posterior cornu of the uterus, and stitches them to the uterus, making the full support depend on the suture in the uterus. He does not bring the ends of the ligaments together posteriorly and stitch them together, as I do. Bringing the ends of the ligaments together and stitching them by my present method, makes the whole integrity of the operation depend on the juncture of the ligaments, and the stitch holding the ligament to the uterus is a mere incident, and could be left out.

The method he follows to-day is exactly like my original method, less the fact that I severed the round ligaments and he does not. The method I follow to-day is in no respect like his, except that I no longer sever the round ligaments, but bring them through double, as he does. In other words, his present method is as much like my original one as my present method is like his. If I have appropriated from him for this, so also has he appropriated from me. The truth is that he has modified his details, and I have modified mine. He has adopted as much of mine, as I have of his.

I reiterate most emphatically there is not an iota of difference in principle between what he has been doing for years and what I have been doing for the same length of time, the details of technic are unimportant in the issue, and I have as much right to them as he has, whether he has used them or not.

This brings me to the question of my right to have a hand in the development of this achievement. His first article appeared Oct. 5, 1901. My first paper was read before the Section of Gynecology, College of Physicians of Philadelphia, Feb. 20, 1902. This is an interval of more nearly four months than seven (apparently another deliberate misstatement of his); therefore our original papers were essentially produced at one and the same time, and it can hardly be doubted but that we had, both of us, been working at the subject for a long time beforehand, a thing which has occurred often with different men in different parts of the world.

As for my having withheld credit from him for his work, this is a misrepresentation which certainly seems to be a deliberate one. During all these years I have written exactly three papers of importance dealing directly with this operation. In each of these, I have given full credit to Dr. Webster.

In my original paper, in the *American Journal of Obstetrics and Diseases of Women and Children*, xlv, No. 5, 1902, I discuss in full, using his name, the merits and demerits of both procedures. I go even further in this: I held my paper up for a month after writing it in order to write Dr. Webster, and I added the final paragraph of the paper, giving him additional credit for the contents of his letter. If I take credit for that month, there was in reality only three months between the publications of our work.

My second important publication is found in *Surgery, Gynecology and Obstetrics*, Chicago, April, 1909, pp. 421-434. In this paper I state: "The mechanism is plain, but has never to my knowledge, been fully appreciated or fully pointed out even by Webster, who has, for the same length of time, performed an operation with exactly the same principles, but varying slightly in technic."

In my third important publication on this operation, in THE JOURNAL of the American Medical Association, Feb. 18, 1911, I repeat this statement.

In addition to all this, for years it has been my invariable custom in my lectures at the Philadelphia Polyclinic always to mention the name of Dr. J. Clarence Webster in connection with the operation and to give him full credit. Hundreds of men can readily bear witness to this fact. What has been his treatment of me in all these years? He has never once mentioned my name in connection with this procedure except to abuse me.

The sum total of his charge is that the operation I did originally is entirely different from the one he did. This I deny emphatically. The principle of each is precisely the same. He charges that I claim, and have claimed, priority to this principle, directly or indirectly. I have clearly shown that I do not, and never have claimed priority, but have always given him equal and due credit.

I, however, have, and do claim, that I evolved the principles of the operation at or about the same time as Dr. Webster, and I claim the right to go ahead, and develop that principle in all its details, irrespective of what rights he thinks he has in the premises.

J. M. BALDY, Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CAUSE OF CONVULSIONS IN INFANTS

To the Editor:—At a recent meeting of our county society the cause of convulsions in a breast-fed infant of six months was discussed. As etiologic factors the following were mentioned: gastro-intestinal disturbances, adherent clitoris or prepuce, worms, especially roundworms, etc. The question as to what were the common causes of convulsions in infants was discussed, especially the possibility of round-worms being an etiologic factor. What are the possibilities of *Ascaris lumbricoides* causing convulsions in infants, and how frequently are they found in breast-fed infants?

A. Z., Iola, Kan.

ANSWER:—Convulsions in infancy are of three kinds: (1) those due to organic changes in the brain, meninges or skull; (2) those due to epilepsy; (3) those due to tetany. Practically all the so-called reflex convulsions—the convulsions at the onset of acute infections, during the course of gastro-intestinal disturbances—are dependent essentially on a chronic hypersensitive condition of the central nervous system as manifested by electrical and mechanical reactions, and with a tendency toward convulsions, laryngismus stridulus and carpopedal spasms. The two commonest names for this group are spasmophilic diathesis and tetany. The tendency to convulsions is manifest before the actual convulsions occur (latent tetany), and by electric examination one can foretell in a large percentage of cases which infants will tend to have convulsions at the onset of an acute illness.

The cardinal symptoms of tetany are: 1. Erb's phenomenon: This is the response of the motor nerves to minute galvanic currents. Pathognomonic for tetany and most important especially in the latent cases, because it may be the only sign present, is the cathodal opening contraction with a current of less than 5 milliamperes. 2. Chvostek's sign: By tapping the facial nerve a contraction occurs in the muscles of the face supplied by that nerve. 3. In the more severe cases tapping the muscles will produce a contraction; this is best seen by tapping the extensors of the leg. 4. Trousseau's sign: By constriction of the upper left arm the hand will take on the obstetric position; the hand will be flexed at the wrist and the forearm flexed at the elbow.

Thus by electric examination one can determine whether a case belongs in Group 3 or in Group 1 or 2. Almost constantly associated with tetany are more or less marked evidences of rachitis, and it is supposed that both depend on a common error in the metabolism, especially of the calcium salts.

The question of roundworms causing convulsions during the first six months of life of a breast-fed infant is one that can be answered in the negative. Practically all breast-fed children are guarded against the possibility of infection with roundworms; that is, taking the worm larvæ in their food, or by playing on the ground getting the larvæ in their fingers and carrying them thence to their mouth. Recent experiments have shown that from the roundworm toxins can be obtained that act markedly in the gastro-intestinal tract and nervous system. The belief that convulsions occur as the result solely of worms is becoming rarer as the true causes of convulsions are becoming known.

JELLYFISH STINGS

To the Editor:—I have read with much interest your notes on jellyfish sting and am struck by the fact that, although apparently *Physalia* is sometimes a very active poisoning agent, as it is found in our latitude it seems to have lost most of its virulence. On three or four occasions in the last twenty years I have captured a *Physalia* off Newport, R. I., and, though always stung quite unpleasantly, I never found it necessary to resort to any treatment; nor did my father, who has an exceptionally tender skin.

Malcolm Storer, M.D., Boston.

To the Editor:—In connection with the article on sting of Portuguese man-of-war published in The Journal, April 22, I would refer you to the adventure of the celebrated Captain John Smith of Virginia with a sting-ray as given in Smith's own history of Virginia.

Jesse Ewell, M.D., Ruckersville, Va.

SLANDERING THE FLEA

To the Editor:—It is a curious coincidence that the leading German weekly, the *Deutsche med. Wochenschrift,* makes the same mistake that The Journal did (April 8, page 1073) in its abstract of Nicolle's work on typhus. [Corrected April 22, page 1236.]

The German *Wochenschrift* states in its abstract of Nicolle's work, April 6, page 657, that *Flöhe,* "fleas," are involved in the transmission of the disease. What can there be in Nicolle's article that hypnotizes reviewers into mistaking lice for fleas? It is to be hoped that the Flea family will not take revenge on the reviewers for this baseless calumny! At the same time, as the darkey said afterward when his minister had accused him of having stolen some chickens and he was able indignantly to deny the accusation, "If he had said ducks he would have got me."

S.

FILTER WANTED FOR CISTERN

To the Editor:—Please tell me how to construct or where to buy a cheap but effective filter for water running off a roof into a cistern. The water will be used for drinking purposes.

Paul D. Espey, Port William, Ohio.

The Public Service

Medical Department, U. S. Army

Changes for the week ended April 22, 1911.

Williamson, L. P., lieut., left Hachita, N. M., with Co. I, Signal Corps, en route to San Antonio, Texas.

Gosman, George H. R., major, orders directing him to proceed to the Philippine Islands for duty revoked.

Bernheim, J. R., D.S., left San Francisco on two months' leave of absence.

Ingalls, R. E., D. S., ordered to proceed from Fort Douglas, Utah, to Fort Huachuca, Ariz., for temporary duty.

Hewitt, John M., M.R.C., relieved from duty at U. S. military prison, Fort Leavenworth, Kan., and assigned to duty on the transport *Dix*, relieving First Lieutenant James B. Ferguson, Medical Reserve Corps.

Griffis, Frank C., M.R.C., relieved from duty at Fort D. A. Russell, Wyo., and ordered to Henry Barracks, Porto Rico, for duty, relieving First Lieutenant Thomas M. Foley, Medical Reserve Corps, who will proceed to New York City for further orders.

Porter, Ralph S., captain, relieved from duty at Army General Hospital, Fort Bayard, N. M., and ordered to Fort William H. Seward, Ala., for duty, relieving Captain Fred W. Palmer, Medical Corps, who will proceed to Seattle, Wash., for further orders.

McAlister, John A., Jr., D.S., will proceed to San Antonio, Texas, for duty with maneuver division.

Cutliffe, William O., M.R.C., relieved from treatment at Walter Reed General Hospital, Takoma Park, D. C., and will return to his station.

Hill, Eben C., lieut., ordered to Walter Reed General Hospital, Takoma Park, D C., for observation and treatment.

McAlister, John A., Jr., granted leave of absence for ten days.

Brownlee, C. Y., major, left Fort Des Moines, Iowa, with the 1st Squadron, 6th Cavalry, en route to Douglas, Ariz., for duty.

Wing, F. F., D.S., returned to Fort D. A. Russell, Wyo., for temporary duty.

Worthington, J. A., lieut., reports assignment to temporary duty at Fort Riley, Kan.

Austin, Thomas C., lieut., ordered to sail for duty in the Philippine Islands, about August 5, instead of June 5, 1911.

Medical Corps, U. S. Navy

Changes during the week ended April 22, 1911.

Robnett, A. H., P. A. surgeon, detached from the marine corps rifle range, Winthrop, Md., and ordered to temporary duty at the naval hospital, Boston, and to duty on board the *New Jersey* when placed in commission.

Woods, E. L., P. A. surgeon, detached from the naval hospital, Annapolis, Md., and ordered to duty with the United States legation guard, Peking, China.

Owens, W. D., P. A. surgeon, detached from duty with the United States legation guard, Peking, China, and ordered home to await orders.

Boyd, J. C., medical director, transferred to the retired list from June 1, 1911.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended April 19, 1911.

Stimpson, W. G., surgeon, granted seven days' leave of absence from April 18, 1911, under paragraph 189, Service Regulations.

Nydegger, J. A., surgeon, granted one month's leave of absence from March 24, 1911, on account of sickness.

Wickes, H. W., surgeon, granted seven days' leave of absence from April 22, 1911.

Bryan, W. M., asst. surgeon, directed to report to the chairman of board of medical officers at Washington, D. C., April 24, 1911, for examination to determine his fitness for promotion to the grade of passed assistant surgeon.

Krulish, E., asst. surgeon, directed to report to the chairman of board of medical officers at Washington, D. C., April 24, 1911, for examination to determine his fitness for promotion to the grade of passed assistant surgeon.

Jones, O. E., A. A. surgeon, granted thirty days' leave of absence from April 20, 1911.

Walker, W. S., A. A. surgeon, granted seven days' leave of absence from April 13, 1911.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

PROGRESS IN STATE LEGISLATURES

ALABAMA

The governor has vetoed the optometry bill which passed the legislature under a misunderstanding of its provisions. The Justice bill, to amend the state medical practice act, is still before the legislature.

ARKANSAS

The state board of health bill has passed the senate.

COLORADO

The Sharpley bill (S. 63), to amend the medical practice act, has passed the senate. The Hasty bill, to require physicians to report all cases of tuberculosis and landlords to report all tuberculous tenants to the health officials, has passed the house.

ILLINOIS

H. B. 493, to provide for the registration of births and deaths, has been referred to the committee on sanitary affairs. This bill is modeled largely after the vital statistics bill drafted by the committee on medical legislation of the American Medical Association. The occupational disease bill passed the house by a vote of 105 to 1. This bill was drafted by a special commission appointed by the governor to investigate conditions in manufacturing establishments where poisonous materials were used, and is intended to protect employees in occupations that subject them to illnesses and diseases incidental to their work. The optometry and osteopathic bills in the senate and house are still in committee.

INDIANA

The McCarty bill, to provide for medical inspection of school children, has passed the house.

IOWA

The osteopathic bill has been killed in the committee on Judiciary. A bill introduced by Representative Miller, of Bremer County, to prohibit physicians and surgeons from entering into agreements regarding fees, was defeated in the house by a vote of 22 to 37. A bill to create a commission to investigate the causes of insanity, epilepsy, mental deficiency, delinquency and criminality has passed the house. A bill to provide for the sterilization of habitual criminals, imbeciles, idiots and feeble-minded persons confined in state institutions, has passed both houses.

MAINE

The osteopathic bill has been defeated by a small margin in the senate and by an overwhelming majority in the house. A bill designed to prevent physicians from carrying insurance against malpractice suits has also been defeated.

MICHIGAN

A chiropractic bill has failed to pass. A bill to amend the medical practice act has been withdrawn. A bill to require parties to a marriage contract to furnish a physician's certificate of good health before obtaining a license passed the house by a vote of 57 to 29. A bill which, according to the Bay City (Mich.) *Tribune*, is believed to emanate from the Antivivisection Society of New York, has been introduced; it provides that one-half hour every week be devoted in all the schools of the state to humane education. A bill to require local boards of health to report the effect of occupations on persons subject to tuberculosis has been signed by Governor Osborn. A bill to abolish the common drinking cups in all railroad cars except Pullmans, has passed the senate.

MINNESOTA

S. B. 787 to reduce the requirements for examination for physicians, has been withdrawn. A bill to require a license fee of $500 from Christian Scientists has been "definitely postponed."

MISSOURI

A bill authorizing the formation of districts for the prevention of tuberculosis has passed both houses of the legislature. It is understood that this bill has the personal endorsement of Governor Hadley. A commission appointed by the governor reports that there are between 6,000 and 7,000 cases of tuberculosis of the lungs in Missouri and that infection is transmitted through lack of proper care and precaution. The bill permits of the organization of districts throughout the state to avoid the further spread of the disease and to provide proper care and treatment for those already afflicted.

TENNESSEE

A vital statistics bill and a bill to amend the medical practice act have been introduced, also one providing for the medical inspection of school children. Another bill requires a health certificate as a condition for a marriage license. Through the efforts of the Tennessee Federation of Women's Clubs, a bill providing for the protection of the eyesight of new-born infants, has passed both houses of the legislature and has been signed by the governor. An amendment to the present excellent pure food and drug law, a sanitary hotel bill, an itinerant venders bill and a state hygienic laboratory bill have also been introduced.

NEW JERSEY

A bill to provide for the registration of trained nurses has been introduced, also a bill to amend the existing medical practice act.

NORTH CAROLINA

The legislature has adjourned after increasing the appropriation for public health from $8,000 to $22,000 and giving the state board of health an additional $5,000 to investigate the water-supply. A school for the feeble-minded has been established. A bill to permit the shipment of bodies from this state to other states for the purpose of anatomic work, has become a law. The legislature refused to appropriate $3,000 for free diphtheria antitoxin but appropriated $2,000 for the free treatment of hog cholera. A bill was passed allowing West Asheville to incorporate itself as a sanitary district and to vote a special tax by which to raise sufficient revenue for sanitary work, such work to be carried out by a commission under the direction of the county and state boards of health. It is hoped at the next session of the legislature to extend this privilege to all parts of the state so that any community county desiring may form a sanitary district to raise funds for public health work.

NORTH DAKOTA

H. B. 436 to require licenses of all hospitals and sanitariums and restricting major surgical operations, has been vetoed by the governor.

PENNSYLVANIA

A number of bills to amend the existing medical practice act have been introduced but none has as yet been passed. An antivivisection bill is in the house committee on public health and sanitation.

UTAH

Bills providing for reporting of contagious diseases by physicians and hotel and lodging-house keepers and reporting of inflammation of the eyes of new-born infants, have passed the house.

WISCONSIN

A bill to provide for medical inspection of school children is before the legislature and has been opposed by the Christian Science members of the National League of Medical Freedom.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Tenth Month—First Weekly Meeting

General Subject for the Month: Legal Medicine

Signs of Death

Somatic Death, Molecular Death

Cessation of Respiration: Auscultation, mirror to mouth, dish of water on chest, etc. Time.

Cessation of Circulation: Relation to respiration, tests. Eye changes. Changes in body temperature. Rigor mortis. Changes in skin.

Rigor Mortis and Putrefaction: Rigor mortis, onset, duration, causes. Effect of disease, violence, age.

Putrefaction: Onset, effect of moisture and temperature, bacteria, air, earth, and cause of death. Adipocere. Mode of decomposition of structures and viscera. Determination of time of death.

Causes of Sudden Death

Sudden Death Due to Natural Causes

Heart Disease: Cardiac thrombosis and embolism, myocarditis, rupture of heart, coronary disease, valvular lesions, aortic aneurysm.

Brain Lesions: Hemorrhages, embolism, thrombosis, in epilepsy.

Lesions of Respiratory Organs: Embolism, thrombosis, hemoptysis, pneumonia.

Hemorrhagic Pancreatitis.

Ectopic Pregnancy.

REFERENCE BOOKS FOR THE TENTH MONTH

Draper: Legal Medicine.
Emerson. Legal Medicine.
Taylor: Medical Jurisprudence.
Wharton and Stille: Medical Jurisprudence.
Reese: Medical Jurisprudence and Toxicology.
Whitthaus and Becker: Medical Jurisprudence.
Peterson and Haines: Legal Medicine and Toxicology.
Hamilton and Godkin: Legal Medicine.

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

Am. Assn. Genito-Urinary Surgeons, New York, May 1-3.
American Dermatological Association, Boston, May 25-27.
American Gynecological Society, Atlantic City, May 23-25.
American Laryngological Association, Philadelphia, May 29-31.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Therapeutic Society, Boston, May 11-13.
Arizona Medical Association, Bisbee, May 2-5.
Arkansas Medical Society, Fort Smith, May 2-5.
Association of American Physicians, Atlantic City, May 9-10.
Connecticut State Medical Society, Hartford, May 24-25.
Florida Medical Association, Tallahassee, May 10.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Kansas Medical Society, Kansas City, May 3-5.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Missouri State Medical Association, Jefferson City, May 16-18.
Montana State Medical Association, Butte, May 10-11.
Nebraska State Medical Association, Omaha, May 2.
New Hampshire Medical Society, Concord, May 11-12.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fifth Annual Meeting, held at Albany, April 18-19, 1911

The President, Dr. Charles Stover, Amsterdam, in the Chair

PROCEEDINGS OF THE HOUSE OF DELEGATES

Dr. Charles Stover, Amsterdam: The Committee on Experimental Medicine is asking for the pecuniary support of this society in carrying on the work entrusted to it, and should receive it. The report of the Committee on Public Health is of more than ordinary interest in that it deals with the importance of establishing and maintaining county laboratories. The funds necessary for carrying to a conclusion the work that has been begun in relation to tuberculosis alone are so great that, inasmuch as the benefit to the public is correspondingly large, there is no reason why boards of health should not take on themselves the continuation of a great deal of the work that has been begun by private fortunes. This has already been done in some of the cities of the state where boards of health have taken over tuberculosis dispensaries originally started by branches of the state charities aid.

Report of the Committee on Experimental Medicine

The Committee on Experimental Medicine, in cooperation with the Committee on Legislation and with public-spirited men throughout the state, labored successfully to prevent the passage by the legislature of 1910 of two bills relating to experiments on living animals. One bill sought to impose restrictions, which were against the public welfare, on the performance of such experiments. A joint hearing before the judiciary committee of the senate and the assembly was held on Feb. 23, 1910. The other bill represented a new departure on the part of antivivisectionists in that it sought to establish a commission to inquire into the extent and nature of animal experimentation in this state. It was a real antivivisection measure thinly disguised. Hearings on this bill were held before the ways and means committee of the assembly and before the finance committee of the senate. The Committee on Experimental Medicine felt it to be its duty to combat the mistaken and unsound notions of their opponents relating to experimental medicine, and to oppose both bills, and its representatives appeared at the hearings and presented arguments to this effect before the legislative committees. Both bills died in committee. There is no doubt that again and again, with each succeeding year, this contest will be renewed; at least, so long as the funds provided for the purpose, and a willingness to regard experimental workers as unworthy of belief in the matter of their operative technic, continue. Every member of the profession should regard this controversy as a personal one, since the results affect all alike so far as the prevention and cure of disease are concerned.

Report of the Counsel

Mr. James Taylor Lewis, counsel for the society, reported on Medical Defense. Seventeen state societies have now adopted this feature, and the medical profession is fast coming to realize how important it is that its members should stand shoulder to shoulder in repelling vicious attacks on physicians, since there is no litigation more far-reaching in its importance, not only in its effect on the profession, but also by its indirect influence on the public health.

Report of the Committee on Public Health

While those colleagues who reside in large cities have every opportunity and facility in laboratory advantages, others in the smaller towns and villages do not, and the committee believes them to be entitled to every and any aid which can be given to them. These men stand in the front rank of earnest, honest, hard-working, self-sacrificing members of the medical profession, and they should not be denied these advantages simply because of their environment. Such laboratory facilities would not only enable county medical men to keep modern, but would exert a profound and lasting influence over the public at large. It is assumed that the thirty-eight counties in the state containing hospitals would be glad to furnish laboratory space for the *quid pro quo* of the paid resident pathologist and his assistant.

Report of Committee to Consider the Question of Increasing Interest in the Society

The fifty-eight county societies of the state represent at the present time a membership of about 7,000, and while there has been a steady growth each year, it is not large. If state, district branch, and county society meetings are improved, increased growth will necessarily follow. This committee offers the following suggestions for increasing interest in county societies:

1. Improve programs. Interest in the meeting depends largely on the attractiveness of the program.

2. Take up post-graduate course as recommended by American Medical Association. This systematizes the program.

3. Confer with state board of health for at least one meeting a year on public health matters. Cooperation with the health department is essential to the welfare of the community.

4. Have at least one speaker a year from a distance, obtained by conference with committee on scientific work of state society if necessary. It will be glad to suggest names of those willing to render such service.

5. Arrange for one or more clinical meetings a year. Select subjects and request all who have proper cases to bring them before the society. Then have a discussion, always with the understanding that discussion of the case shall not be held in the presence of the patient; otherwise, frequently patients cannot be shown for obvious reasons.

6. Arrange for demonstration by bacteriologists and pathologists, with specimens, lantern slides, etc.

7. Arrange for social part of meeting. Some light refreshments at the close of the meeting are an adjunct to fraternal intercourse.

8. See that meetings are held often enough to keep up interest. Once or twice a year is not enough. Invite every member of the profession in the county to at least one meeting a year, not necessarily inviting them all to the same meeting. In counties where men do not show a willingness to write papers either designate writers for different meetings or see that outsiders are invited. In other words, see that the meetings are made interesting. It should be the aim of every county society to secure a permanent home, a small library, with a supply of current journals, and the use of the larger libraries for reference books will greatly increase interest in the county organization.

9. Arrange the time of meeting to accommodate the largest number of members. When men come from long distances, an evening session is obviously the most inconvenient. An afternoon session will often appeal to a larger number of men when it permits them to reach their homes at a seasonable hour.

10. Select as officers men who are willing to work. Keep good men in office. Do not promote those who have shown that they will not attend to the duties assigned them. Efficiency is the only criterion of leadership. No physician should accept office unless he is prepared to give the position the attention that it deserves, and unless he is interested in the work.

11. In small societies do not unduly multiply offices—the secretary's and treasurer's duties can be best done by one man.

12. Make dues large enough to warrant conducting the society work in a proper manner.

13. Provide a committee on entertainment which shall welcome new or prospective members or guests at meetings. The officers of the society may be active or ex-officio members of such committee. Newly registered physicians should be visited by such committee or written to and asked to join the county society.

14. See that the meetings, programs of proceedings are published regularly and promptly in the state journal.

15. Have high ideals. Be liberal yet firm in the maintenance of a high ethical standard. Educate the public. Be a power for good in the community. Do not be ashamed of the county society or apologize for it. Make it better. Attend all meetings and see that others do the same. The county society is a conservator of patriotism and worthy citizenship.

Animal Experimentation

Dr. Carr, of New York City, offered the following resolutions:

Resolved, That the members of the House of Delegates do hereby declare that animal experimentation in this state is conducted in a proper and merciful manner, and that such experimentation is positively essential to medical progress; that unmerciful experimentation is not practiced in this state and is prohibited by law.

Resolved, That Senate Bill No. 310, calling for the investigation of vivisection in this state is therefore unnecessary and mischevious and calculated to hinder and interfere with vivisection, and correspondingly lessen the humane benefits derived therefrom.

Resolved, That we respectfully petition the legislature to express decided disapproval of all measures coming before it opposed to animal experimentation for the purpose of medical advancement; also all measures calculated to hinder or destroy the same.

These resolutions were adopted unanimously.

Membership in State and National Organizations

Dr. E. LeFevre, of New York, offered the following:

Whereas, The Board of Trustees of the American Medical Association has requested an expression of opinion on the subject of making in the future all members of state societies and county societies in affiliation with them *ipso facto* members of the American Medical Association, and in order that the board may make a satisfactory report to the House of Delegates of the national organization relating thereto, be it

Resolved, That the foregoing request of the Board of Trustees of the American Medical Association be referred to a committee of five, to be appointed by the president of this society for investigation as to the legality, expediency and advisability of the proposition, and to report to this House of Delegates at the next annual meeting.

On motion, the resolution was adopted.

The President appointed on this committee Drs. E. LeFevre, New York; S. B. Ward, Albany; W. W. Skinner, Geneva: J. C. MacEvitt, Brooklyn; and Wisner R. Townsend, New York.

Vaccination of School Children

Dr. D. S. Dougherty, of New York, offered the following resolution, which was adopted:

Whereas, There is a bill in the assembly known as Bill No. 611, designed to allow unvaccinated children to attend school on presentation of a physician's certificate that such pupil's or person's physical condition is such that vaccination will jeopardize his or her health, or on a written declaration from the parents or guardians of such pupils or persons to the effect that such parents or guardians are conscientiously opposed to vaccination; therefore, be it

Resolved, That this society protests against the passage of this act as inimical to the best interests of the state, and respectfully urges the legislature to withhold its approval of the measure.

Medical Education and Medical Practice Act

The following resolutions were adopted:

Resolved, That the Board of Regents of the University of the State of New York be requested to recommend such change in the medical practice act as will raise the requirements for securing the medical student's certificate to include, in addition to the standard high school course, one year in college, or its equivalent, embracing especially the following subjects: physics, chemistry (inorganic and qualitative analysis), and general biology.

Resolved, That the state society recommends to the Board of Regents that an investigation be conducted in order to ascertain the number of internships available in the hospitals of the state with a view to recommending a fifth year in hospital for the completion of the medical curriculum.

Registration of Midwives

Dr. Bernard Cohen, of Buffalo, offered the following resolution, which was referred to the council:

Whereas, In the larger cities in the State of New York nearly half of the births are attended by midwives, many of whom are wholly untrained for the responsible work which they assume, therefore, be it

Resolved, That the Erie County Medical Society favors the adoption of an educational standard similar in character to that which is now provided for trained nurses, and that it recommends the state medical society take such action as may lead to the establishment of a standard, the requirements of adequate examinations, with universal registration of all midwives practicing in this state.

Optometry

Dr. H. W. Wootton, of New York City, presented the following preambles and resolutions, which were referred to the council with power to carry out the recommendations:

Whereas, A law is now on the statute books creating a special class of practitioners known as optometrists, and

Whereas, This law gives to certain persons the right to adjust lenses to eyes with defects of vision and prohibits the use of drugs in determining the need for and the kind of lenses to be prescribed, and

Whereas, It is the opinion of the medical profession that a knowledge of the subjects taught in medical schools is absolutely essential for the proper and safe performance of the work this law gives opticians the legal right to do, and

Whereas, The entrusting of work so important to the hands of a class of people inadequately equipped, and who are denied the right to use the means necessary to do properly the work they are authorized to do, is a positive menace to the community; therefore, be it

Resolved, That it is the judgment of the Medical Society of the State of New York that the legislature made a serious mistake in enacting this law; that in the judgment of this society the legislature should be respectfully petitioned to repeal this iniquitous law; that in the judgment of this society Columbia University has taken a decided step backward in establishing a course in optometry in its extension teaching, advertising the same as an opportunity for men and women with only two years of high-school training to enter a "new profession."

Resolved, That Columbia University by creating this department and granting certificates of proficiency to students who fulfil its requirements not only discredits its own medical department but discriminates against its medical graduates, of whom is required a preliminary training far in excess of that required of the optometrist, which discrimination is especially intensified by the fact that the medical graduates who take up the practice of ophthalmology come in direct competition with graduates in optometry.

Resolved, That Columbia University by establishing this course in optometry has given support to a horde of incompetents who are constantly endeavoring to tear down the barriers created by the state for the protection of the public health, as is attested by the fact that the action of Columbia University in this particular is being advertised all over the United States by opticians seeking identical privileges elsewhere.

Resolved, That in view of the foregoing statements the medical society of this state respectfully urges Columbia University, in the City of New York, to abolish its course in optometry.

Officers Elected

The following officers were elected: President, Dr. Wendell C. Phillips, New York City; first vice-president, Dr. Peter W. Van Peyma, Buffalo; second vice-president, Dr. William F. Campbell, Brooklyn; third vice-president, Dr. C. R. Hervey, Oswego; secretary, Dr. Wisner R. Townsend, New York City, re-elected; treasurer, Dr. Alexander Lambert, New York City, re-elected; delegates to American Medical Association: Dr. A. T. Bristow, Brooklyn, Dr. J. W. Fleming, Brooklyn, Dr. Wesley T. Mulligen, Rochester, Dr. Henry L. Elsner, Syracuse, Dr. Edgar A. VanderVeer, Albany, and Dr. E. E. Cornwall, Brooklyn; alternates, Dr. S. W. S. Toms, Nyack, Dr. A. Walter Suiter, Herkimer, Dr. W. B. Handbidge, Ogdensburg, Dr. J. C. MacEvitt, Brooklyn, Dr. W. W. Strang, New York City, and Dr. Otto Pfaff, Oneida.

Albany was selected as the place for holding the next annual meeting, and the time April 16-17, 1912.

(*To be continued*)

TENNESSEE STATE MEDICAL ASSOCIATION

Seventy-Eighth Annual Meeting, held at Nashville, April 11-13, 1911

The President, Dr. John A. Witherspoon, in the Chair

The officers elected were named in The Journal, April 22, in the News Department.

Radium

Dr. G. P. Edwards, Nashville: In my experience, covering a period of nearly seven years, I have observed the action of radium in a great many different conditions and have gained confidence in its virtue. In thirty-eight cases of cancer of the lip, twelve of which were postoperative, there were thirty-one cures and six failures; one patient failed to report results. In seventy-six cases of cancer of the face, nine of which were postoperative, one patient failed to report, in one the radium failed, and seventy-four patients were cured. Eight recurrences yielded to treatment. In seventeen cases of cancer of the eyelids, nine involving the mucous margin, six the canthus, and two the skin, cures were effected. In eight cases of cancer of the breast there were three failures and five cures. In three cases of cancer of the nipple, there were one failure and two cures. In four cases of lupus vulgaris, all the patients were cured. Of seven patients with lupus erythematosus, six were cured. Of nine individuals with cancer involving the buccal spaces, gum, or mouth, six were cured. Three cases of cancer of the scalp terminated in recovery in all. Of two patients with cancer of the antrum, one recovered; of six with cancer in the nares, five recovered. In one case of cancer of the umbilicus a cure was effected, and also in thirteen cases of cancer of the neck. Six cases of cancer of the hand all resulted in cure. This report does not include patients now under treatment, nor does it include those cases in which the *x*-ray was used in conjunction with radium except when the radium was used subsequent to *x*-ray failure.

DISCUSSION

Dr. G. C. Savage, Nashville: I saw the case of malignant growth in the nasopharynx. The growth was removed, and it was one of the bloodiest operations I have ever seen. Radium treatment followed its removal, and the patient is now well at the end of eight or ten weeks. Another patient with sarcoma of the nasopharynx came under my observation, but was not operated on. Radium was used. There had been hemorrhage every day from the malignant growth, but under the use of radium by Dr. Edwards this patient is now fairly robust. There are no longer hemorrhages, and there is free use of the respiratory passages.

Significance and Surgical Treatment of Uterine Displacements

Dr. R. M. McCowan, Knoxville: In treatment of uterine displacements there are a few principles that appeal to me more strongly than others. These are: 1. The perineum must be looked on as the most important feature for consideration, for without perfect support here, anything one may do is futile. There are many operations that are suggested for repair of the perineum; I prefer the modified Tait. 2. Next in importance is the correction of the angle between the uterus and the vagina. This is accomplished by shortening the round ligaments, lifting the uterus forward and upward. When the anterior portion of the ligament is especially weak, I have found the modified Gilliam, Mayo and Fowler operation satisfactory. This consists in pulling the inguinal portion of the round ligaments through the outer border of the recti, and stitching them together on the anterior portion of the muscle. Another method which I have used for several years is one suggested first by S. M. Miller, of Knoxville. It consists in lifting the uterus upward and forward through an abdominal opening, until the round ligaments are brought into view; an incision is carried through the parietal covering along the long axis from the uterine end a variable distance toward the pelvic wall, in accordance with the relaxation present; the fibers of ligaments are then separated the length of the incision, and the halves, together with the attached peritoneal covering of broad ligaments, are drawn apart. The distal and proximal extremities are brought together by a suture passed through the tissues beneath the cuts from just beyond one extreme to the other. A single lateral suture on either side the central will close the incision in a transverse line and shorten the ligaments to the extent of the primary incision. In prolapse, the operation of selection is that suggested by Crile. It consists in tying off the ovarian arteries and in doing a supravaginal hysterectomy, leaving a long fan-tail leaf on either side of the body of the uterus; these are brought through the recti on each side and stitched together in the same manner as in the round ligament operation. The greatest difficulty in dealing with these cases is the fact that often there is an existing general visceroptosis. In anterior displacement, usually a complete dilatation of the cervix is all that is required with a pulling down and stretching of the ligaments, or a wedge-shaped portion of the cervix may be removed from the posterior portion, as has been suggested by Dudley.

DISCUSSION

Dr. R. Caldwell, Nashville: I have found as many retrodisplaced uteri in women who have not borne children as in child-bearing women, and yet so far as we could determine, in those women the perineum was normal. I am inclined to believe that if we can maintain the normal position of the uterus by means of the ligaments or guy-ropes, and maintain the proper angle, and bring the uterus forward, we will prevent retrodisplacements.

Dr. C. N. Cowden, Nashville: Not every woman with a backward displacement of the uterus should be subjected to operation, because women are not all of the same nervous temperament, and while a backward displacement in one patient will create enough nervous disturbance to warrant an operation, in other instances such an operation would not be required. We must individualize in these cases before we can ever apply the rule in a sensible way.

Traumatic Perforation of Abdominal Viscera

Dr. W. M. McCabe, Nashville: Within the last eighteen months I have had the following cases of injury to the abdominal viscera: One gunshot perforating wound, the patient dying. Eight gunshot perforating wounds with bullets, four of which required resection; seven of the patients recovered. There were two gunshot-wounds of the liver, one operated on, and one not operated on; both patients recovered; one penetrating gunshot-wound; three stab wounds of the stomach through the left interspaces; four stab wounds of small intestines; one stab wound of ascending and transverse colon; one stab wound of the spleen; three penetrating stab wounds. All patients with stab wounds recovered. I believe that as a rule the median abdominal incision is preferable in gunshot wounds, but occasionally vary this procedure. I do not hesitate to make a subsequent incision if it will facilitate matters and allow of more thorough and satisfactory examination. If resection is decided on, I clamp the gut, take out a triangle of mesentery, and control the hemorrhage. A Connell suture of linen is then inserted at the mesenteric border, and this suture is run continuously around the gut, going through all coats. This part of the anastomosis is completed by suturing the rent in the mesentery with the same thread. This suture is covered with a Czerny-Lembert suture in the peritoneum, and reinforced with catgut, if necessary. I am careful to make the suture approximate, but do not allow it to constrict. I now examine the work, invaginate the bowel through the anastomotic ring, and if the thumb and forefinger meet I am satisfied. If only perforations are to be dealt with, I put in a purse-string suture of linen, if it does not constrict the lumen too much, or suture with a through-and-through linen suture and cover with a Czerny-Lembert of catgut or linen. The perforations having been closed, I wash the intestines with saline solution and drop them back into the abdominal cavity. The peritoneal cavity is then sponged out with gauze sponges; I never flush the cavity with any kind of solution. I have sponged away pumpkin seeds, tomato skins, feces, and other matter, and have yet to regret that I did not flush the cavity. If there has been much soiling of the peritoneum, I insert a drain. I should be delighted if the drain could be dispensed with, but as yet I have not been sufficiently convinced that it is a useless procedure. I have learned, however, that all drains produce necrosis of the abdominal wall, and for this reason they should always be brought through a separate stab, thus allowing the abdominal incision to heal by first intention and preventing hernia and other complications.. The patient is placed in bed in the Fowler position, the Murphy drip enema is given constantly, and all food and water is withheld for twenty-four hours. Purgatives are not given for at least five days. *This treatment is not* carried out unless I suspect that peritonitis is liable to occur. While I have done the end-to-end anastomosis with success, I believe the lateral method is safer and may use it hereafter.

DISCUSSION

Dr. W. D. Haggard, Nashville: The meeting of the Southern Surgical and Gynecological Association in this city in 1896 marked the first crystallization of the expression of immediate abdominal section for every penetrating abdominal wound. It was the sense of that body that immediate exploration should be the rule in all cases of gunshot and stab wounds of the abdominal viscera, and since then I think this has been the opinion of most surgeons, and also that if we should fail to do this and peritonitis should occur, and we are powerless to control it after eight hours has been permitted to elapse, we have been guilty of a grave error. I think, sometimes, that in the future this may assume a medicolegal aspect. I do not feel that we should shirk moral responsibility in these cases, to say nothing of surgical responsibility. As a matter of fact, we have two lives in our hands—the life of the victim, and the life of the assailant. Dr. McCabe has reported an unusual group of cases, with a satisfactory rate of mortality, and the lesson we ought to learn is to suspect every penetrating wound of the abdomen to be a perforating one, and never rest contented until we see inside the abdomen and repair thoroughly every wound after having gone over every inch of the viscera.

Dr. J. L. Crook, Jackson: One remarkable thing in cases of this character is the improved mortality within the last five years. The point made of using a stab wound for a drain is a good one, whether operating for perforation of the intestine or for other purposes. If we can make drainage through a separate incision, we can get a better result than by draining in some cases through the original wound.

Dr. J. A. Gaines, Nashville: One of our greatest authorities on duodenal ulcer, Moynihan, suggested that when there is perforation, especially when there are beans, lettuce, cabbage and things of that character in the abdominal cavity, another opening should be made and the abdomen flushed. I do not believe that we should make such an opening for the purpose of flushing out things of that character. Flushing should not be done; we should pick out these things, and clear out the foreign material as well as we can by mechanical applications, without flushing the abdomen, and using drainage in all cases of this character.

Dr. L. L. Sheddan, Knoxville: I have observed that stab wounds are simpler than gunshot-wounds. I have seen two patients die because in closing the perforation the peritoneum was not closed a sufficient distance around the margin of the wound. Again, paralysis is more likely to follow an injury from a gunshot-wound than from a knife of a stab wound. The author of the paper said that in injuries of the liver, the liver does not bleed very much. It has been my observation that it bleeds very profusely when injured.

Cancer of the Breast

Dr. H. M. Tigert, Nashville, advocated surgical treatment for the relief of this condition.

DISCUSSION

Dr. L. E. Burch, Nashville: According to the statistics of the United Kingdom, one woman out of every twelve in the year 1908 died of cancer, and in the State of New Jersey last year more people died from cancer than from tuberculosis. The only way to effect a radical cure of this condition is to make an early diagnosis and operate promptly. Every tumor of the breast in a woman above the age of 35 should be removed and examined.

Dr. B. Malone, Memphis: There is great diversity of opinion as to the etiology of cancer. In Rome practitioners have reverted to the Cohnheim embryonic theory of cancer. They are using an emulsion of embryos in the treatment of cancer in the experimental laboratories there, and while they are not making many claims, the results have been encouraging. Dr. W. J. Mayo, who saw some of this work while he was abroad, says that in his opinion it promises more than anything else in the way of a specific cure for this disease.

Dr. J. M. King, Nashville: Every tumor of the breast should be removed before *x*-ray treatment is resorted to. I do not think any one should apply the *x*-ray treatment to a tumor of the breast unless it has recurred.

Dr. E. T. Newell, Chattanooga: I have had two cases which showed that tumors of the breast occurring in women over 35 are not always malignant. One patient has gone five years since the removal of the tumor without recurrence, and the other three years without recurrence.

Dr. McPheeters Glasgow, Nashville: In tumors of the breast occurring in young people it is advisable to remove the breast at once, but in a woman over 50 it might be well to watch the case carefully before advising operation. Certainly, operation should not be advised on seeing the patient once or twice.

Dr. W. T. Black, Memphis: Early extirpation is the only remedy, and all tumors of the breast should be treated as malignant unless they are proved to be benign.

Dr. J. Overton, Nashville: I think that we should use Coley's fluid in cases of inoperable cancer, unless some serum of more pronounced value is brought to the attention of the profession in the meantime.

Dr. W. Litterer, Nashville: It is important to examine the axillary glands in cases of cancer from a prognostic standpoint.

Dr. C. A. Robertson, Nashville, spoke of metastases in cancer of the breast, and detailed a very interesting case which came under his observation within the past eighteen months.

Dr. W. H. Witt, Nashville: In two cases in my practice, the disease recurred after ten years in one, and in the other after seven years. These recurrences were metastatic in nature. One patient died two or three months following the recurrence.

Spina Bifida

Dr. B. B. Cates, Knoxville: I previously reported three cases of spina bifida operated on, with one death. Since publishing this report, I have operated on four other patients with one death, making a total of seven operations with two deaths. There were five males and two females. The ages varied at the time of operation from 28 days in the youngest to 26 years in the oldest. The situation of the tumors was in the cervical region once in a female, twice in males; once in the lumbar region in a male, once in the lumbosacral region in a male, once in the upper sacral region in a male, and once in the mid-sacral region in a male. One step in the technic of the operation concerns the closure of the spinal defect with osteoplastic grafts. In not one of my cases was there enough bone at hand to cover the opening, so I used the deep fascia, by dissecting enough from without inward to cover over the defect when turned over the middle line. This fascia is strong and dense enough to form a strong bridge. It is not necessary to overlap the flaps, simply stitching the edges together with fine catgut being all that is necessary. I think that I caused necrosis in one case by imbricating the flaps, thus cutting off the blood-supply.

DISCUSSION

Dr. J. L. Crook, Jackson: I have had two cases of spina bifida under observation. In one of these the child was so weak that I did not think it would survive an operation, hence I did not operate. The other child was 8 months old and had a meningocele in the lumbosacral region, on which I operated successfully.

Dr. B. Malone, Memphis: My experience also is limited to two cases. In one, there was a meningomyelocele, and the other was a pure meningocele. In meningomyelocele, in which the sac is composed of cord elements, the prognosis is unfavorable.

Dr. R. Caldwell, Nashville: Attention should be given to the association of spina bifida with hydrocephalus. When this is the case, very little can be expected from operation, as these patients become hydrocephalic and die from exhaustion and imbecility after a few years of life.

(To be continued)

Book Notices

Differential Diagnosis. Presented Through an Analysis of 383 Cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Cloth. Price, $5.50 net. Pp. 753, with 195 illustrations. Philadelphia: W. B. Saunders Co., 1911.

Cabot proposes to study medicine from the point of view of the presenting symptom, by the case-history method. Cases are grouped according to the chief symptom, such as headache, lumbar, abdominal or epigastric pain, fevers, chills, coma, convulsions, cough, hematuria, jaundice, etc. Each section is prefaced by a statement of the possible causes of the symptom under discussion. Illustrative cases follow, in which the salient points in the history, examination and laboratory findings are given, the differential diagnosis discussed, and diagnosis made. Numerous plates showing the distribution of pain, physical findings, etc., accompany the case histories. Diagrams are given, showing graphically the relative frequency of the several diseases in which any one symptom may be the principal complaint. These are based on hospital records and at times may be misleading to the general practitioner who sees a less selected series of cases.

Cabot is no respecter of traditions and, as occasion presents, criticizes those which he believes are not founded on facts—e. g., the relation of backache and pelvic disease, tapeworm and abdominal pain, poor teeth and digestive disturbances. It is perhaps superfluous to conduct obsequies over "rheumatism" and "gastralgia," as they have been buried already by most of the profession. The importance of lead intoxication as a cause of many obscure symptom-complexes is rightly emphasized. The cases cited in illustration of abdominal and epigastric pain are particularly instructive.

In many instances the diagnosis is arrived at through an admirable course of reasoning. We may, however, question the advisability, even for teaching purposes, of arbitrarily placing difficulties in the way of diagnosis by the suppression of facts which are obvious on careful examination. A diagnosis made in spite of omissions deserves no special credit. We may also question certain diagnoses in that they are made on insufficient evidence, or the resources of diagnosis are not all utilized. Abdominal pain is frequently caused by constipation, but to dismiss a case with this unreserved diagnosis after a short period of observation may be dangerous, in view of the frequency with which carcinoma presents the same symptoms. It is, however, easier to criticize a diagnosis than to make one, and the general impression made by a case often has a weight which cannot be conveyed by verbal expression.

Typographic errors are few. Kernig's sign is repeatedly referred to as "Koenig's" sign.

The chief value of "Differential Diagnosis" lies not in the introduction of new facts, but rather in the demonstration to the student of the manner by which he may arrive at a reasonable diagnosis by careful observation and proper correlation of the facts obtained from the history, physical examination and laboratory findings. To the practitioner also, who would go beyond the mere treatment of symptoms, or learn of the difficulties surmounted by another, this book will prove of great interest and value.

Vaginal Celiotomy. By S. Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Price, $5 net. Pp. 443, with 148 illustrations. Philadelphia: W. B. Saunders Co., 1911.

In this valuable work the author has very clearly stated the technic of vaginal operations and amplified them with comprehensive illustrations, so that the various surgical procedures are made perfectly clear. Even though the reader has had no personal experience with the vaginal route, he can hardly fail to see its advantages and the great field it offers in certain stated gynecologic operations. The history of anterior vaginal celiotomy is clearly outlined and beautifully illustrated and the possibilities and the indications are so accurately described that one is fully impressed with its value, while the comparative advantages of the vaginal over the abdominal route are succinctly expressed. The technic in anterior vaginal celiotomy is clearly outlined, and, although the author has fully impressed the reader with its difficulties, he encourages those who are not familiar with the route to become acquainted with it. The positive indications for conservative operations on the ovaries and tubes, retrodeviations of the uterus, and cystocele, are tersely given. Added to the subject of total uterine prolapse is the technic of the amputation of the cervix, which is an important evolution in the operative procedure for permanent correction of procidentia. The description of vaginal hysterectomy, myomectomy, vaginal Cesarean section, metreurynter incision, and minor vaginal Cesarean section, makes this volume a complete summary and the most comprehensive work in vaginal operations that has been published. It is invaluable to the gynecologist, the surgeon, and the obstetrician, as well as to every physician who desires to be intelligently informed on the late and advanced methods of gynecologic surgery.

Photographic Atlas of Radiography of the Mastoid Region and of the Nasal Accessory Sinuses. By Joseph C. Beck, M.D., Clinical Professor of Oto-Laryngology, College of Physicians and Surgeons, University of Illinois. Half Morocco. Price, $8. St. Louis: The Laryngoscope Co., 1911.

This loose-leaved atlas, so constructed as to permit changes to be made in the radiographs it contains, has been compiled by Dr. Beck with the cooperation of a radiologist and a photographer. To avoid marking the photographs which have been used, half-tones being unsatisfactory, the author follows the scheme of using an outline drawing to explain the radiograph after the manner of Killian's "Atlas on Face Reproduction." The importance of following the technic, which is fully outlined, is emphasized. Three positions are suggested: The postero-anterior position shows the frontal sinuses, ethmoids, orbits, and the antra and nasal cavities; the lateral position, the sphenoidal sinuses, the sella turcica and the depth of the frontal; the mastoid position is limited to use in studying the mastoid, the middle ear and the lateral sinus. These positions permit of the study of fractures and diseases of the bones and of foreign bodies, as well as the condition of the sinuses. The photographic methods that have given best results are explained. Eight stereogram illustrations are presented; four showing the positions described, three radiographs of a skull taken in the different positions, and one the difference between a stereoscopic and pseudoscopic image as shown in Dr. Kelly's atlas. Then follow twenty-five photographs, 19 cm. by 24 cm., from radiographs of the skull and of the head, showing the normal and certain abnormal conditions of the sinuses and some results of faulty technic.

The purpose of the atlas is to aid in the interpretation of radiographs of the head. To the degree that it is accepted as establishing a standard of technic, it will attain its object.

Serum and Vaccine Therapy. Bacterial Therapeutics and Prophylaxis Bacterial Diagnostic Agents. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology, King's College, London. Second Edition. Cloth. Price, 7 shillings 6 pence net. Pp. 406. London: J. & A. Churchill, 7 Great Marlborough Street, 1910.

The first chapter of this book is taken up by an introductory consideration of the principles underlying immunity processes in general. The preparation and practical application of the various antitoxic and antimicrobic serums are then concisely described. The section of the book dealing with the principles of vaccine therapy, and giving practical directions for preparation and use, is especially valuable. Hewlett's views concerning direct transfusion are somewhat at variance with the prevailing American ideas and the subject is therefore dismissed with but slight consideration. The references to important literature on the different subjects constitute a valuable portion of the book.

Tuberculosis of Farm Animals. Bulletin 149, University of Illinois Agricultural Experiment Station. By Charles F. Briscoe and W. J. MacNeal. Urbana, Ill., February, 1911. Paper. Pp. 431.

This bulletin contains a splendid summary of the findings of experimenters and investigators in this and foreign countries concerning tuberculosis in farm animals, especially with reference to its transmission by means of the bovine form of the bacillus to human beings through the various channels. It also contains the results of the study and experiments at the University of Illinois Agricultural Experiment Station, together with an extensive bibliography relating to this line of work.

Medicolegal

Evidence Which Dead Body Cannot Be Made to Furnish

The Supreme Court of New York, Special Term, Erie County, holds, in the case of Danahy vs. Kellogg (126 N. Y. S. 444), that no right of exhumation, inspection, dissection, microscopic examination, and taking of culture is furnished in a civil action by the code provision in that state that a court of record has power to compel a party to make discovery of any article or property in his possession or under his control relating to the merits of the action or of the defense therein.

In this case was the first application of the kind ever made, so far as the court is aware. The action was brought by the administratrix of the estate of Matthew Danahy, deceased, to recover damages for his death, alleged to have been caused by injuries received in a collision with an automobile claimed to have been owned by the defendant. The accident occurred July 10, 1909, and the death of Danahy on November 20, 1910. The certificate of death signed and filed by the attending physician stated the cause to have been malignant endocarditis. The discovery and inspection of the body, with permission to take cultures and to have microscopic examinations made, it was alleged, would furnish the means of determining the exact cause of said disease.

The denial of the application was based squarely on the absence of any right or authority in the court to grant the inspection, etc., asked, notwithstanding the provision in the code above mentioned. In considering the latter, the court is sure that the legislature could not have had any intention to include the body of a dead person within the description of an "article" or "property," or have had in mind an application to exhume the remains of a deceased person for the purposes of the section. But, even though it authorizes an order for the production and inspection of a buried human body, the court finds nothing in the section which could possibly authorize its dissection, etc. If the article to be inspected were a piece of machinery, instead of a human body, the court, under the section relied on, would not be warranted, it thinks, in making an order permitting the machinery to be taken apart, and a part of it carried away for the purposes of further examination. Much less would the court be justified in permitting an autopsy on a human body.

There is, strictly speaking, no right of "property" in a dead body. A long line of judicial decisions appear to have established the general doctrine to that effect, although the law has been relaxed to the extent of giving the husband, widow, or next of kin the right of protecting the remains of the dead and saving them from desecration, which can be enforced by appropriate legal remedies.

Validity of City Ordinance Requiring Tuberculin Test

The Supreme Court of Wisconsin, in Adams vs. City of Milwaukee and others (129 N. W. R. 518), holds valid a city ordinance requiring the tuberculin test, and that there was no error in a judgment against enjoining the enforcement of the ordinance. It says that it is not necessary to support the ordinance to show that human pulmonary tuberculosis is caused by drinking the milk of cows afflicted with bovine tuberculosis. If the milk of such cows produces disease of any kind, or is harmful to health, this is a sufficient basis for police regulation of its sale and distribution in the city.

Attention was called to chapter 542, Laws of Wisconsin for 1909, and to the following statutes of other states, recognizing the efficiency of the tuberculin test: Indiana, chapter 181, Laws 1909; Delaware, chapter 122, Laws 1909; Maine, chapter 133, Laws 1909; Maryland, chapter 466, Laws 1910; Michigan, chapter 172, Laws 1909; Minnesota, chapter 392, Laws 1909; New York, pages 28, 29, vol. 1, Consol. Laws 1909; North Dakota, chapter 160, Laws 1909; Oregon, chapter 213, Laws 1909; South Carolina, chapter 131, Laws 1909; South Dakota, chapter 291, Laws 1909; Tennessee, chapter 475, Laws 1909; Vermont, No. 1, chapter 163, Laws 1908; Virginia, chapter 335, Laws 1910. The court was also referred to the cases of State vs. Nelson, 66 Minn. 166; Nelson vs. Minneapolis (Minn.), 127 N. W. R. 445; and New Orleans vs. Charouleau, 121 La. 890.

The evidence and findings in the present case, this legislation, and these decisions, go to show a widespread recognition of the danger of infection from bovine tuberculosis and of the efficacy of the tuberculin test. When there are conflicting scientific beliefs or theories in such matters it is for the city council to determine on what theory it will base its police regulations, and unless it is clearly and manifestly wrong it is not for the courts to interfere on the ground that the scientific theory on which the ordinance is based is incorrect or unsound.

Nor does the court consider that the ordinance is rendered void because it applies only to dealers in milk drawn from cows outside of the city, when there are other regulations covering the sale of milk drawn from cows kept within the city. There is a sufficient basis for such classification in the difference of facility for inspection and regulation.

Furthermore, the court thinks that a situation was disclosed in which it might be said that the common council had the right to decide that destruction of the milk was the only available or efficient penalty for the enforcement of the ordinance, and that such destruction was necessary, and the ordinance cannot be declared unreasonable in this particular. Then the plaintiff himself must by his own act expose his property to confiscation before this portion of the ordinance will affect him injuriously, and there is a distinction recognized in some cases between preexisting nuisances and those created by wilfully placing property in the forbidden place or condition after the enactment of an ordinance, and in defiance of it. Self-inflicted damage is not recoverable.

Who Accounted "Physicians Now Registered" Under Medical Practice Act

The Supreme Court of Missouri, Division No. 2, holds, in State vs. Carson (132 S. W. R. 587), that, as the defendant was concededly registered and licensed under the Missouri act of 1877, he came squarely within the exception to the act of 1901, as "a physician now registered," and that no subsequent act of the Missouri legislature has revoked the license given him under the act of 1877, so that it was error to require him to have been also licensed by the board of health.

The court says that, after the defendant was duly registered under the act of 1877, namely, in 1880, by filing a copy of a diploma, the legislature passed the act of 1883, which provided that it should not apply to those who had been practicing medicine five years in that state prior to the enactment of that law, but contained no provision as to prior registration. Then came the act of 1901, making it a misdemeanor for any person, "except physicians now registered," to practice medicine or surgery without a license from the State Board of Health. The trial court held that a physician registered under the act of 1874 was a registered physician within the meaning of the law of 1901, and a physician registered under the act of 1877, five years before the act of 1883 went into effect, would be registered within the purview of the law of 1901, but, inasmuch as the defendant was not registered until 1880, less than five years before 1883, he was not a registered physician within the meaning of the law of 1901, which last conclusion was erroneous.

The construction which the state sought to have given the act of 1901 would necessitate the court amending the statute so that it would read: "Any person, except physicians now registered and qualified to practice under the laws of 1883." The defendant was not prosecuted for a violation of the act of 1883 while it was in force. That act was, in turn, repealed by the act of 1901, and five years' practice no longer afforded protection. Thus if a physician had practiced five years before 1883, but was not registered, he would clearly fall under the condemnation of the act of 1901 because he was not registered. What effect then had the act of 1901 on the registration of the defendant's diploma and certificate in 1880? The diploma was registered under the law of 1877, and no subsequent act required or permitted it to be registered again. While it might or might not have protected him from prosecution during the life of the act of 1883, what was there to prevent the legislature repealing the act of 1883 as it did, and providing that his registration under the act of 1877 should protect him from prosecution and permit him to continue his practice? No act of the legislature had revoked the license the state had granted him in 1880, and no tribunal authorized to do it had done so. Even if it should be said that the act of 1883 impliedly rendered his registration ineffective, it cannot be doubted that the legislature could restore its efficacy by express provision as it did in 1901. This court is unable to see any substantial reason why a physician registered under the act of 1874 should be within the exception to the act of 1901, and one registered under the act of 1877 under the broad language of the exception of the act of 1901 does not also fall within the act of 1901.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 13

1 *An Analysis of Forty-Six Cases of Prostatectomy. L. Davis, Boston.
2 *Vaccines in Puerperal Sepsis: W. H. Watters and C. A. Eaton, Boston.
3 *Intrathoracic Insufflation Anesthesia: Apparatus and Cases. A. Ehrenfried, Boston.
4 Extirpation of the Tonsil by Enucleation: Partly Instrumental, Partly by the Use of the Finger. L. M. Freedman, Boston.

1. **Prostatectomy.**—A summary of the results obtained in the twenty-four cases of perineal prostatectomy reported by Davis, shows that two patients died; in neither case was death directly due to the operation. All the others left the hospital in good condition with obstruction relieved. In fifteen cases, the end-results have been excellent in every respect—all that could be expected or desired. In two other cases the result is marred only by the loss of sexual power. One patient has a persistent cystitis which is symptomatically controlled by regular treatment; otherwise he is well. In four cases the results are not so satisfactory. In one there is poor control of the bladder, so that the patient prefers to wear a urinal. In another there is, at times, under stress, lapse of control. Two patients have persistent perineal fistulæ; in one of these there is also some cystitis.

Of the twelve patients operated on by the upper route, two died. One patient, in whom the complication of closure of the bladder outlet during convalescence occurred, requiring a secondary operation, has not been traced since discharge. There is no reason why the final result should not have been satisfactory, however. In one case in which the suprapubic operation followed an unsuccessful partial perineal prostatectomy, by another surgeon, Davis says that the incontinence which followed unquestionably would not have occurred if the external sphincter had not been injured in the first operation. In the eight remaining cases the functional results were excellent. Two patients have died since leaving the hospital, one three months afterward of pneumonia, one four years later of new growth of bladder; in neither were there any symptoms on the part of the prostate. Six patients have recently reported themselves alive and well without urinary symptoms. Data as to amount of residual urine are unfortunately meager; several of the patients lived at considerable distances and were able to report only by letter. In six cases in which it was recorded, the highest amount was 1½ ounces in a man who previous to operation had lived a catheter life for fifteen years; in the other five cases it was less than 1 ounce. As to sexual power, data are still scantier. Two patients are known to have retained it; in one patient who underwent both operations it was lost.

2. **Vaccines in Puerperal Sepsis.**—Fifty cases are reported by Watters and Eaton. This includes all patients who have been treated, the good and the bad, the early and the late. Among this series are a few who received ante partum prophylactic injection on account of bacteriologic findings or unusual opportunities for possible puerperal infection. These all recovered. It is of further interest that certain others who likewise received prophylactic treatment showed pure cultures of streptococcus in the uterus post partum, but without any clinical symptoms of sepsis or other complication. This was never noted in other normal patients not so treated. Among the fifty cases reported, four patients died within twenty-four hours of the first treatment, being practically beyond any hope of recovery when vaccines were first requested. Three others were moribund when inoculations were begun. Here life was possibly prolonged two or three days. Apart from these, there are forty-three patients, two of whom died and forty-one recovered. Of the two who died, one was operated on for suspected pus tube, which was not found, the patient dying six days after; the other was subjected to blood transfusion, dying within a few hours.

The method of using the vaccine was to administer a polyvalent preparation immediately after the diagnosis seemed definite, as determined by bacteriologic tests and to repeat as necessary until the autogenous preparation was ready, about twenty-four hours later. The vaccines were prepared by the use of the minimum degree of moist heat, a method apparently followed by better results than when the earlier method was employed. Careful watch was made to ascertain any possible injurious effects or aggravation, but even in the worst cases none could be demonstrated. On the contrary, a number of patients who seemed to be almost without hope of recovery made very happy convalescences. No claim is made by the authors that the vaccines should replace other generally recognized methods. On the contrary, they insist that the vaccines should be used to assist all other methods that have proved to be of value. In the series reported a hot vaginal douche has usually been employed; very rarely, in only one or two cases, an intra-uterine douche. Curettage was not performed in any instance. The bowels have been maintained in an active condition and remedies have been used when indicated. The authors have strongly advised leaving the patient as free from manipulation or local treatment as possible, and believe that the results well bear out these instructions. Two facts are given in conclusion: One that no demonstrable harm has been often done to any person; the other, that patients have shown much improvement after the inoculations and have recovered when even the best clinicians have foretold a fatal termination.

3. **Intrathoracic Insufflation Anesthesia.**—The apparatus Ehrenfried uses consists of a Wolff bottle with three necks sitting within a copper water jacket, and a foot bellows. By means of cocks on the outside of a jacket, the stream of air from the bellows can be carried through the hot water, over the top of the ether (contained in the Wolff bottle), or through the ether when a particularly strong vapor is desired. Air and ether vapor may be mixed in any proportion. Connected with the delivery end of the apparatus is a safety valve and pressure regulator consisting of a bottle of mercury into which a tube is plunged. The depth of the tube in the mercury, which is adjustable, represents the maximum of pressure which is allowed within the apparatus; if for any reason, such as a spasm of the glottis, the pressure should rise, the valve "blows off" automatically and danger from interstitial emphysema is avoided. In his early experiences, Ehrenfried employed a dial manometer registering in millimeters of mercury, to record the pressure, but he has found that the pressure bottle answers as well for all practical purposes. The apparatus is provided with a device to prevent droplets of condensed ether being carried over into the larynx.

The air or mixture is supplied at a practically constant temperature of about 10 degrees above room temperature; if the operation is to last over half or three-quarters of an hour the contents of the water jacket should be replaced. The air supplied may be filtered and moistened. For an intratracheal tube he uses a French lisle catheter, 22 to 24 F., moistened in hot water to render it pliable, a new and sterile one being used for each case. Soft rubber tubes have the advantage of standing sterilization by boiling better, but they are less easy to introduce. The chief difficulty with this method of anesthesia so far has been the introduction of the tube. He now uses a simple introducer, a laryngeal forceps with sleeves attached for grasping the tube near its extremity, similar in principle to the introducer of Doyen. After considerable pains to produce the proper curve—working on frozen sections and cadavers—Ehrenfried has devised an instrument which can be guided into the larynx in a few seconds, with the mouth gag in place and the left forefinger on the epiglottis, without the necessity of using a head mirror or electric illumination, or changing the patient on the table to and from the Rose position, as is necessary with the direct laryngoscope. Ehrenfried has tried this apparatus successfully four times on human beings.

Medical Record, New York

April 8

5 *Posture as an Aid in Diagnosis and Treatment of Cardiac [illegible] and Dropsical Conditions of Various Origin. [illegible]
6 [illegible] llch, with Special Reference to the [illegible] B. T. Terry, New York.
7 [illegible] se War. C. E. Woodruff, U. S. Army.
8 *A Case of Erythremia with Unusual Features. N. E. Brill, New York.
9 Psychoses of Child-Bearing. J. D. Morgan, Washington, D. C.
10 Acute Urethritis of Chemical Origin. W. J. Robinson, New York.
11 Removal of the Septal Floor in Submucous Operations. A. Kahn, New York.

April 15

12 Purpura. J. S. Thacher, New York.
13 *An Unusual Fracture of the Bodies of the Fourth, Fifth and Sixth Cervical Vertebræ, with Injury of the Spinal Cord. W. H. Swan, Colorado Springs, Colo., and C. A. Powers and H. T. Pershing, Denver.
14 Four Cases of Ureteral Calculus. H. D. Furniss, New York.
15 Metallic Foreign Bodies in the Tissues; a New Telephonic Searcher. W. S. Thomas, New York.
16 Embolism and Thrombosis of the Pulmonary Artery; Report of Three Cases. J. Funke, Atlanta, Ga.
17 *[illegible] Skin by a New Iodin Solution. E. McDon-[illegible]
18 [illegible] stic Degeneration of the Kidney. H. B. [illegible]
19 [illegible] y Students and Others, Being Random Suggestions for the Younger Practitioners. R. H. M. Dawbarn, New York.

5. **Posture as an Aid in Diagnosis of Cardiac Affections.**—It is for cases of extreme cardiac failure due to dilatation secondary to severe valvular disease or myocardial disease that Berg has found that a posture which is a combination of recumbency with vertical or semivertical position, forms a powerful adjuvant in the treatment. He has placed such patients in bed with the head of the bed raised, as in the Fowler position, but with the patient in what he calls the reversed Trendelenburg position. The patients lie on an inclined plane, body and legs extended, with the head and shoulders at the top and the feet at the bottom of the inclined plane. The posterior legs of the bed on which the patient lies are raised 4 to 24 inches from the floor, resting on chairs or wooden supports with a broad base and narrower top, shaped like truncated cones or pyramids, or by any other means that may occur to the physician or some ingenious relative. The full height of 24 inches should not be attained, however, at one stroke, but gradually, so that the patient may not get an annoying sense of insecurity from the unaccustomed attitude of lying on an inclined plane, down hill, as it were. At the foot of the bed the patient's feet should rest against a well-bolstered or padded wooden rest, which extends across the width of the bed. Well-padded boards, 15 to 18 inches wide, should bound the sides of the bed to prevent the patient slipping out during sleep.

The whole structure should be as firm as though the patient's bed were resting in the usual horizontal manner on the floor, in order to give the sense of security. The patient's head and shoulders should be supported by pillows and sometimes by a head rest. The body should lie recumbent on the bed in this inclined plane without any bend at the hips, so that the maximum downward effect of gravity on the liver and abdominal organs may be obtained. The upward pressure on the diaphragm is thus removed; the heart relieved by the increased space thus obtained, and the venous return in the portal veins, vena cava and pulmonary veins encouraged. Berg has seen patients suffering from cardiac failure as a result of dilatation complicating valvular disease and myocarditis, more especially when mitral regurgitation is an element of the valvular disease, immensely relieved of their dyspnea by this posture alone, even before other more direct therapeutic measures were applied.

8. **Erythremia.**—Brill's patient, in addition to an erythrocytosis of between 8,000,000 and 10,000,000 cells, a leukocytosis varying between 20,000 and 45,000 leukocytes, presented few features of a cyanosis, a much relatively diminished hemoglobin content, the color index being far below 1, showed marked signs of bone marrow involvement with a colossal spleen and a very large liver. The spleen was much larger than in other affections, excepting those found rarely in leukemia and more commonly in the Gaucher type of primary splenomegaly. But even in these affections Berg has never seen a larger spleen than this patient presented. From the clinical evidence, he says, one must conclude that this patient was suffering with the disease which has been variously called polycythemia with chronic cyanosis, splenomegaly, erythrocytosis, splenomegalic polycythemia, myelopathic polycythemia, erythremia, erythremia megalosplenica, Vaquez's disease, Osler's disease.

13. **An Unusual Case of Fracture.**—The subject of this report was a man, aged 70, who had always been remarkably active physically and mentally. He had been for years harrassed by a gouty eczema and had been treated for arteriosclerosis some years before. About seven months prior to the injury to be described, after a hard day's ride and tramp in the mountains, he had acute dilatation of the heart, from which he suffered up to the time of his accident, though he persisted in long rides and unwarranted exercise. About noon, Oct. 27, 1906, while riding, his horse stumbled. He was thrown, evidently striking on his forehead. There was immediate and complete motor and sensory paralysis below the neck without loss of consciousness. There was involuntary evacuation of the bladder and bowels at the time of the accident and again after being put to bed. By the use of moderate doses of morphin, the patient passed a fairly comfortable night, requiring catheterization; priapism was present. There was no difficulty in swallowing.

During four or five weeks following the injury he was catheterized three times daily and had no irritability of the bladder. From that time up to the time of his death he was catheterized from four to ten times in twenty-four hours, the frequency varying without apparent physical cause. He was given hexamethylenamin continuously during the twenty-eight months of his illness, in daily doses of from 10 to 30 grains. There were apparently no harmful effects from it unless it had to do with the constantly low solids in his urine during the last twenty-four months of his life. He never regained control of his bladder, though after three months he could reinforce the flow and a few times voluntarily passed 1 or 2 ounces. There was often marked tympanites and digestive disturbance, but, for the most part, the bowels were easily moved daily by laxatives and enemata. Occasionally there were loose involuntary movements. There were a number of periods of great weakness and mental hebetude, which were relieved by free elimination by the bowels. There seemed, at times to be an element of mental fatigue in this depression. Sleep was always difficult, requiring constant use of hypnotics. At the end of nine weeks the patient was up daily, taken out in a wheel-chair, and very soon was lifted into his automobile and was taking long rides. During the following year he often drove for five or six hours a day, with no apparent fatigue, was taken to a number of social functions in his own and adjoining towns, and took keen, active interest in all affairs of life. Mentally he was extremely active, at times giving close application to business affairs for six or seven hours a day. He became able to write short notes (writing by whole arm movement); could, without effort, feed himself by means of a spoon or by taking food in his right hand, and was often taken to the dining table, and about his house and grounds in his wheel-chair. He could move his legs to a considerable degree (the right leg and arm much more than the left) but could never stand or sit alone, nor was he ever able materially to change his position in bed without help. The heart at times showed a systolic murmur of the apex, but from the time of his injury was entirely competent.

At the end of eighteen months he had become more sleepless and depressed. He then went to England, making the trip very comfortably. During his six months' stay there he had an attack of bronchitis and lost ground in all ways, coming home in November, 1908, considerably weaker physically and less active mentally than when he left. During the winter he drove in his automobile almost daily, up to two days before his death, when he became uremic, and died March 13, 1909, twenty-eight and one-half months after his injury. The points of general interest in this case seem to be: (1) The marked mental activity and endurance of the patient; (2) prolonged excessively low solid content in the urine; (3) prolonged use of hexamethylenamin without apparent harm; (4) relief from long standing eczema; (5) the acquiring of compensation in a weak heart by enforced rest; (6) avoidance of bedsores and cystitis. The bodies of the fourth, fifth and sixth vertebræ were moderately crushed together without buckling of the spine or encroachment of its canal.

17. **Skin Sterilization by Iodin.**—The mixture used by McDonald consists of iodin, 2 parts; carbon tetrachlorid, 98 parts.

New York Medical Journal

April 15

20 Causes and Treatment of Rectal Constipation and Obstipation. S. G. Gant, New York.
21 Symptomatology of Leprosy. H. Fox, New York.
22 Evidences that the School Nurse Pays. S. W. Newmayer, Philadelphia.
23 Anterior Polioencephalitis. I. D. Steinhardt, New York.
24 A Case of Syphilis Followed by Paresis. C. Pope, Louisville.
25 Etiology of the Functional Nervous Diseases. G. E. Price, Philadelphia.
26 *Duodenal Ulcer. J. M. Lynch, New York.
27 Importance of Nasal Breathing. A. E. Schmitt, New York.
28 Rôle of Acute Bronchitis, Exacerbations and Remissions in Pulmonary Tuberculosis. H. J. Hartz, Philadelphia.

26. **Duodenal Ulcer.**—In the case reported by Lynch the patient gave no history of any disturbance of digestion. Her pain was all referred to the region of the appendix, and the tenderness was confined to the same region. Later, Lynch elicited the fact that she suffered off and on from what she called indigestion; that she occasionally had pains coming on some four or five hours after eating; took something for relief, vomited and felt better after it.

Lancet-Clinic, Cincinnati

April 8

29 Research Work in Mechanical Therapeutics. R. K. Smith, Boston.
30 A Case of Vagus Heart-Block, and Its Relation to Vagotonie. L. H. Newburgh, Cincinnati.
31 Tonsillotomy or Tonsillectomy? F. W. Davis, Cincinnati.

April 15

32 *Pulmonary Tuberculosis and Syphilis. R. H. Babcock, Chicago.
33 Convergent Squint; Its Etiology and Necessity for Its Early Treatment. H. C. Parker, Indianapolis.
34 Pleural Effusions, Their Diagnosis and Treatment. E. B. Montgomery, Quincy, Ill.
35 Surgical Aspect of Salvarsan. D. C. Handley and C. T. Souther, Cincinnati.
36 The Doctor in the Millcreek Valley Forty Years Ago. F. H. Rowe, Cincinnati.

32. Abstracted in The Journal, Oct. 1, 1910, p. 1220.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March

37 Multiple Cesarean Section with Results in Thirty-Nine Cases, Done at the New York Lying-In Hospital. R. McPherson, New York.
38 Cesarean Section; Twenty-Seven Cases Without Maternal Mortality. G. M. Boyd, Philadelphia.
39 Contusions of the Abdomen, Resulting in Injury to the Contained Viscera. F. H. Jackson, Houlton, Maine.
40 Uterine Perforation, Laceration of the Small Intestine, Resection, Hysterorrhaphy. S. Wiener, New York.
41 Fibroid Tumors Complicating Pregnancy, Labor and the Puerperium. J. T. Johnson, Washington, D. C.
42 The Pathologic Versus the Physiologic Era in the Surgical Treatment of Intra-Abdominal Infections. J. W. Kennedy, Philadelphia.
43 Simultaneous Occurrence of Adenocarcinoma and Sarcoma in the Same Uterus. A. T. Jones, Providence, R. I.
44 Choice of Delivery in Moderately Contracted Pelves. W. G. Dice, Toledo, Ohio.
45 Conservative Surgery of the Ovaries and Fallopian Tubes. H. S. Lott, Winston, N. C.
46 Fatal Mercurial Poisoning Due to Vaginal Introduction of Bichlorid Tablets. C. B. Schildecker, Pittsburg, Pa.
47 Clinical Considerations of Pelvic and Peritoneal Tuberculosis. C. S. Foster, Pittsburg, Pa.
48 Split Protein Feeding. G. F. Little, Brooklyn, N. Y..
49 Hysteria in Children. R. H. Dennett, New York.
50 Chronic Intestinal Indigestion in Children. T. J. Elterich, Pittsburg, Pa.

April

51 Intramural Abscess of the Uterus. C. C. Barrows, New York.
52 Puerperal Infection, Clinical Varieties and Treatment. J. A. Harrar, New York.
53 Chorioepithelioma. M. Caturani, New York.
54 *Hysteropexies. G. K. Dickinson, Jersey City, N. J.
55 *Four Cases of Eclampsia; Their Treatment. G. W. Kosmak, New York.
56 Treatment of Puerperal Septic Infection and Report of a Case of Septic Thrombophlebitis of Long Duration. W. E. Parke, Philadelphia.
57 Treatment of Acute Puerperal Sepsis. E. J. Ill, Newark, N. J.
58 *Abstraction of Calcium Salts from the Mother's Blood by the Fetus the Cause of Puerperal Eclampsia. J. G. Drennan, Arrochar, Staten Island, N. Y.
59 Epidemic Infantile Paralysis and Its Control by the State Authorities. B. Sachs, New York.
60 Contagiousness of Acute Poliomyelitis. I. Strauss, New York.
61 Infantile Paralysis—Epidemic and Pandemic. J. van V. Manning, Brooklyn, N. Y.
62 Treatment of Infantile Paralysis by Massage and Electricity. H. W. Frauenthal, New York.
63 Manifestations of the Acute Stage of Poliomyelitis in Children. LeG. Kerr, Brooklyn, N. Y.
64 Surgical Treatment of Anterior Poliomyelitis. D. D. Ashley, New York.

54. **Hysteropexies.**—The object of Dickinson's paper is to encourage a broader study of woman and her miseries, of the many conditions inducing and perpetuating the uterine syndrome, of the relation of uterine deviations to other lesions, and the necessity for selecting skilfully a proper operation, with other treatment added, which shall not only comfortably and permanently replace the organ, but relieve the woman of coexisting pathologic states.

55. **Eclampsia.**—The four cases presented by Kosmak are examples of the average run of eclamptic cases, except that two of them were especially severe. Notwithstanding this, the amount of albumin in the urine was not very great, although the quantity of the urine was restricted. It seems to Kosmak that the latter is a fairly safe guide in the prognosis. Emptying the uterus should, he says, constitute only one step of the treatment and should be carried out with the least possible danger to the mother. This means that the forcible methods of dilating the cervix which have been so largely employed in this class of cases should not be permitted, as we have other means to accomplish the same ends. Vaginal Cesarean section or that by the abdominal route, if no contra-indications are present, offers an excellent chance for rapidly relieving the uterus of its contents. There is no doubt whatever but that the former operation can be carried out rapidly and satisfactorily as regards the actual delivery of the child, but the suture of the wound in the cervix and also in the lower uterine segment is necessarily a difficult procedure as it is almost impossible in many cases to bring the upper portion of the wound down into the field of vision.

58. **Abstraction of Calcium Salts.**—Drennan is convinced that the abstraction of calcium salts from the mother by the fetus causes fatty infiltration of the liver cells of the former. This fatty infiltration causes disturbed liver function with the production of toxins from imperfect protein digestion. Circulation of toxins causes fatty degeneration of liver cells thereby increasing the inability of the liver to functionate, with resulting increased toxemia. She says that no chloroform should be administered as it produces fatty degeneration of liver cells. The prevention and treatment of this condition consists in a liberal calcium diet, lessened protein food and, if the patient is not seen until labor has commenced, rapid delivery to rid her of the fetus which is draining her of calcium salts. The hemorrhage attendant on delivery—and in these cases it is sometimes excessive, owing, no doubt, to lack of calcium salts in the blood—will rid the organism of much toxic substances and have a curative effect.

California State Journal of Medicine, San Francisco

April

65 *The Commitment of the Insane in the State of California. A. W. Hoisholt, Stockton.
66 The Municipal Refuse Disposal Problem, with Special Reference to Alameda County Conditions. C. G. Hyde, Berkeley.
67 Diseases of Domesticated Animals Affecting the Public Health in Alameda County. C. M. Haring, Berkeley.
68 Opportunities of the State Hygienic Laboratory. W. A. Sawyer, Berkeley.
69 *The Making of a Health Officer. W. C. Rucker, San Francisco.
70 The Obstetric Consultant. E. M. Wilder, Sacramento.
71 Treatment of Rodent Ulcer. D. Friedlander, San Francisco.
72 Osteoplastic Operations in Pathologic Bone Cavities. D. D. Crowley, Oakland.
73 A Case of Aneurysm of the Abdominal Aorta, with Operation and Introduction of Wire. J. H. O'Connor, San Francisco.

65. **Commitment of the Insane in California.**—The evils connected with the apprehension, detention and commitment of the alleged insane, and their transfer to state institutions are summed up by Hoisholt as follows: (1) They, as sick people, are not understandingly looked after by the police or constables at the time of their arrest. (2) They are still, in some quarters, kept in insanitary places of detention (jails), in which they are given little if any medical attention, and which places are now and then infested with vermin. They are not kept clean while there, nor as a rule furnished with clean clothes when they leave. (3) They are not given as thorough an examination prior to and at the time of their commitment in court as many of the cases require, the special qualifications of the examiners in lunacy being much below par, a matter, however, which time and proper teaching of psychiatry in the medical schools can rectify. (4) They are escorted by men who are accustomed to take care of criminals, but unqualified as nurses to look after this particular class of sick people, and who are doing this in a very uneconomical way.

69. **The Making of a Health Officer.**—Rucker suggests that if a state is blessed with an unusually efficient and progressive board of health, what would be more natural than for that board to offer instruction gratis to all health officers within the state? The cost would not be great and would include printing, postage and a few books of reference to be loaned to those taking the work. As an experiment, a course in public water-supplies might first be offered, and if this proved a success, the scope of the work might be extended. It is believed that such an opportunity would be welcomed, and in offering it no reflections would be cast on the ability of those who, against great odds and an insufficient remuneration, are fighting the public's sanitary battles. A few lectures on hygiene and the occasional opportunities for self improvement afforded by the meetings of the health officers' association and a few scattering articles in the medical journals, cannot be compared with a regular course of study mapped out by men of the experience and learning of an efficient state board. It is admitted that the correspondence method of instruction is not ideal, but it is believed that it would serve to close the present hiatus until better means can be afforded.

Journal of the Arkansas Medical Society, Little Rock

March

74 Surgical Tuberculosis. W. A. Snodgrass, Little Rock.
75 Treatment of Pelvic Cellulitis in the Female. R. C. Dorr, Batesville.
76 Treatment of Fractures of the Long Bones. H. H. Smiley, Texarkana.
77 A Limited Experience in Treatment of Uncinariasis. A. E. Cox, Helena.
78 The Country Physician's Alimentation. C. S. Allen, Harmony.

Texas State Journal of Medicine, Fort Worth

April

79 Uncommon Forms of Acid Intoxication. A. E. Austin, Galveston.
80 Chronic Pancreatitis, Its Diagnosis and Treatment. J. T. Moore, Houston.
81 Two Cases of Septic Emboli Following Acute Mastoiditis. W. D. Jones, Dallas.
82 Surgical Eye Cases. V. H. Hulen, Houston.
83 *The Open-Air Treatment of Postoperative Nausea and Vomiting from Chloroform and Ether. F. L. Barnes, Trinity.

83. **Open-Air Treatment of Nausea.**—Barnes believes that the very best treatment for chloroform and ether nausea and vomiting is plenty of fresh air; that it is not only essential that fresh air should be supplied in a large volume, but that it should be kept moving, in order that the nauseating odors of the exhalations may be removed rapidly. His observation has this history: A great many negroes for whom there are no hospital accommodations, come to his associate and himself for operations. Originally they had an operating room and beds in connection with their office, but it soon became such a nuisance to have this class of patients continually around the office that they hit on the expedient of having them carried immediately from the operating room to their boarding places. Out of a great many cases handled in this manner, they have never had a single mishap, or a single bad symptom follow the practice. They have never known one of these patients to vomit after being carried into the open air, and they are almost never nauseated. The distances from the operating room to the places to which these patients have been conveyed have varied from ¼ of a mile to 2½ miles.

Immediately on the completion of the operation, the patient is placed on a cot, wrapped in blankets, with the face always exposed to the open air, and external heat applied. The cot is then placed in a wagon or hack and driven slowly to the boarding place. If the patient is awake and nauseated when the hack arrives at its destination, they direct that the cot be not carried into the house until the nausea passes off; they also direct that as few attendants as possible be about the patient. They have frequently observed that when they have been a little slow in getting patients out of the operating room, and the latter become nauseated as a result, they will immediately become quiet and drop into a peaceful sleep as soon as they are carried into the open air and started on their journey. It is the practice of the authors to prepare patients for operation by giving a large dose of castor oil or Epsom salts the night before, and an enema of warm salt solution on the morning of the operation; they also generally administer a hypodermic of morphin, ¼ grain, and atropin 1/150 grain, one hour and a half before the operation. A very light supper of soup or broth is allowed the night before, but no breakfast on the morning of the operation.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

March

84 Atypical Onset of Typhoid. McC. Tompkins, Richmond, Va.
85 Preventive Medicine. H. B. Hiatt, Asheboro, N. C.
86 Mental Hygiene in Children. P. V. Anderson, Morgantown, N. C.
87 Some Cases Treated with Salvarsan. L. T. Price, Richmond, Va.

Western Medical Review, Omaha, Neb.

April

88 Suggestions for Municipal Measures of Prevention of Invasions of Infectious Diseases. J. M. Banister, U. S. Army.
89 Dyspepsia from a Surgical Standpoint. G. Haslam, Fremont, Neb.
90 Apocynum in Spinal Meningitis. A. O. Peterson, Omaha, Neb
91 After-Treatment of Appendicitis and Appendiceal Abscess. P. A. Sundbury, Holdrege, Neb.

St. Louis Medical Review

March

92 A Gouty State and its Mimicry. D. W. C. Hood, London, Eng.
93 Where the Physician Must Stand. R. Peter, Chicago.
94 Puerperal Fever. R J. Smith, Logan, Utah.
95 Tuberculosis; Its Nature, Causes and Prevention. J. B. Huber, New York.
96 Complications of Ileocolitis. A. A. Robinson, Ogden, Utah.
97 Treatment of Varicocele. N. N. Wood, Chicago.
98 Evolution and Science in Medicine. J. L. Wolfe, Cedar Falls, Iowa.
99 The Menopause. M. Hale, Hot Springs, Ark.

Interstate Medical Journal, St. Louis

April

100 *Treatment of Malaria. F. S. Meara, New York.
101 Differential Diagnosis and Treatment of Some of the Common Diseases of the Upper Abdominal Quadrant. W. W. Grant, Denver, Colo.
102 *Unexpected Experiences in Lobar Pneumonia. C. G. Stockton, Buffalo, N. Y.
103 Symptomatology of Congenital Pyloric Stricture in Infants. C. G. Cumston, Boston.
104 *A Safe Guide for the Administration of Tuberculin. O. H. Benker, St. Louis.

100. **Treatment of Malaria.**—Speaking of the use of quinin in malaria, Meara says that there is no question that this drug were better given in solution and, indeed, when the condition of the stomach leads to a suspicion of impairment of function and hydrochloric acid may not be secreted, the solution should be used. The drug is freely soluble in any dilute acid, hydrochloric, sulphuric, phosphoric or tartaric. A minim to the grain is enough. The objection to this method is the intensely bitter taste. Effort may be made to disguise it. One way is to dissolve the dose in a few grains of citric acid (gr. x), in a little lemon juice, add to it water in which a pinch of bicarbonate of soda has been dissolved and take while effervescing. In the tertian or quartan fever of a non-pernicious type, Meara says, the daily dose of quinin to begin with should be gr. xv to gr. xx. In the estivo-autumnal form gr. xxx. In the first mentioned forms, Meara prefers to give, if the patient is seen before the paroxysm, gr. xv of quinin sulphate; if seen during the decline of the fever, the same dose. From

that time on he gives gr. xx, divided into four doses in the twenty-four hours (the dose at the decline of the fever forming a part of it), until the succeeding paroxysm is aborted, then diminishing the dose gr. ii every two days until the dose is reduced to gr. vi a day, for three or four weeks. In the estivo-autumnal forms, he gives the large dose gr. xxx to begin with, and after aborting the paroxysms, reduces to gr. xx or gr. xvii and proceeds in the same way as above. In the pernicious infections, quinin must be used hypodermically or intravenously according to the urgency.

The best salt for hypodermic use, in Meara's opinion, is the acid hydrochlorate, which dissolves in less than its own weight in water. He makes up a solution as follows:

℞	gm. or c.c.		
Hydrochlorate of quinin............	5	or	gr. lxxv
Distilled water	10		℥ijss

Use 15 minims as a dose, which will contain 7½ gr. of quinin.

The amount needed in the twenty-four hours is about 24 grains, given in divided doses in this way. In the severe but less urgent forms, if given by the mouth, the amount should run up to 30 or 40 grains a day. In most urgent cases, it may be deemed advisable to put the drug into a vein. This may be done in physiologic salt solution. For example:

℞	gm. or c.c.		
Hydrochlorate of quinin............	1		gr. xv
Sodium chlorid	0|075	or	gr. i
Water	10		℥ijss

Inject all at once into the basilic vein made prominent by a ligature above. Other veins, if more accessible, may be chosen.

102. **Lobar Pneumonia.**—Briefly, the cases reported by Stockton are: (1) Typical lobar pneumonia; marked leucopenia without grave depression; rise of blood-count with defervescence; (2) typical lobar pneumonia and convalescence; three weeks later the patient returned with hyperemia of the lung, fever and serious pharyngitis; abscess, pure pneumococcus culture; (3) pneumonia; acute arthritis; pneumococcus and staphylococcus recovered from blood, staphylococcus vaccine, recovery; (4) chronic valvular disease of the heart, lost compensation, acute arthritis, lobar pneumonia, septicemia, septic endocarditis, pericarditis, hemiplegia; (5) alcoholic, pneumonia, slight involvement, delirium, severe trauma, acute, general pulmonary edema; (6) sudden invasion, high temperature, pulse and respiration, thoracic pain, termination by crisis, physical signs of localized edema.

104. **Tuberculin Administration.**—Benker endorses the method which was advocated and used for a number of years by Sahli.

Alabama Medical Journal, Birmingham

March

105 Early Diagnosis of Cancer of the Stomach. U. J. W. Peters, Birmingham.

106 Nervous Symptoms of Arteriosclerosis and the Removal of the State Causing Them. T. A. Williams, Washington, D. C.

107 Three Cases of Pellagra Treated with Salvarsan. C. M. Nice, J. S. McLester and G. Torrance, Birmingham.

Bulletin of the Johns Hopkins Hospital, Baltimore

April

108 Intermittent Fever in Influenza Simulating Malarial Fever. Grave Malarial Fever With Few Parasites in the Peripheral Circulation. Dangers of the Intravenous Injection of Quinin. W. S. Thayer, Baltimore.

109 The Preparation of Antitoxin. E. J. Banzhaf, New York.

110 *Clinical Value of the Determination of the Catalytic Activity of the Blood. M. C. Winternitz, Baltimore.

111 Distoma Pulmonale in Wisconsin. H. Hanson, Milwaukee, Wis.

112 *Blood Platelets and Megalokaryocytes in Hodgkin's Disease. C. H. Bunting, Madison, Wis.

113 Primary General Peritonitis with Isolation of the *Bacillus Lactis Aerogenes* in Pure Culture from the Peritoneal Exudate. J. W. Churchman, Baltimore.

114 Submucous Resection of the Nasal Septum. S. Rosenheim, Baltimore.

115 *Growth of Embryonic Chick Tissues in Artificial Media, Agar and Bouillon. M. R. Lewis and W. H. Lewis, Baltimore.

110. **The Catalytic Activity of the Blood.**—In his studies of the catalytic activity of the blood in disease, Winternitz followed fifteen cases of typhoid throughout the illness. During the early days of the illness there was no change in the catalytic activity of the blood, but toward the third week there was a gradual fall accompanying the anemia. During convalescence the activity became normal together with the red blood-count. Twelve cases of diseases of the respiratory tract, including lobar pneumonia, tuberculosis and empyema were examined. There was a slight decline in the catalytic activity of the blood during the course of lobar pneumonia. The relation of this decline to the crisis and the salt metabolism of this disease has not yet been determined by Winternitz. In other diseases of the respiratory tract there was no noteworthy variation in the power of the blood to split hydrogen peroxid, except when the disease was accompanied by a severe anemia. In four out of five cases of acute peritonitis examined, there was a characteristic rise in the catalytic activity of the blood. In one a reading had been made before the peritonitis had occurred, while in the other three the increased activity was confirmed by the decline to normal, following operation. In two cases of suspected peritonitis with high fever and leukocytosis, the catalytic activity of the blood was normal, and in these cases the peritoneum was found clean at operation. Diabetes mellitus and catarrhal jaundice exerted no influence on the catalytic activity of the blood. In diseases of the thyroid, both hypothyreosis and hyperthyreosis, the catalytic activity of a single patient's blood was not constant from day to day. In hyperthyreosis the activity tended to increase, while in hypothyreosis the activity assumed a level lower than normal. Winternitz suggests that this may be of significance in interpreting the condition of the thyroid where the signs and symptoms are atypical. In renal, cardiac and cardiorenal cases (twenty-four cases were examined), despite the presence of a marked nephritis, provided there were no symptoms of renal insufficiency (uremia), there was no marked change in the catalytic activity of the blood. In cases of chronic nephritis, accompanied by indefinite symptoms of renal insufficiency the catalytic activity of the blood was irregular from day to day, and tended to assume a level lower than normal. In acute mercurial nephritis there was a fall in the catalytic activity of the blood. With uremic coma there was a marked fall in the catalytic activity of the blood which was permanent if the coma ended fatally, but which recovered when the coma disappeared.

With retention of urine due to obstruction of the lower urinary tract, there was a marked decline in the catalytic activity of the blood. This decline, Winternitz says, may persist for some time, but should the obstruction be removed, the catalase will again rise. Even in severe cardiac disease there is no significant change in the catalytic activity of the blood. In some cases it is high. This may be normal for these individuals, as it will be remembered some individuals have a high activity. In no single case was the activity sufficiently decreased after many readings had been made to suggest renal insufficiency. In three cases of cardiorenal disease, in which the clinical findings suggested a renal insufficiency, the catalytic activity of the blood was normal. At autopsy only a chronic passive congestion of the kidneys, the result of a decompensated heart, was found. In two cases of cerebral hemorrhage the catalytic activity of the blood was high. Whether this is an increase over normal is not known, but it is clear that the high reading would differentiate apoplectic coma from uremic coma.

112. **Blood Platelets in Hodgkin's Disease.**—The findings presented by Bunting would seem to indicate that in Hodgkin's disease there is a special activity of the platelet-producing elements resulting in the production of large numbers of platelets and in the emigration of megalokaryocytes in large numbers from the bone marrow. In the lung capillaries these latter are stripped of their protoplasm, which appears in the peripheral blood-stream in the form of the masses and pseudopodia described. What part this increased platelet production plays in the disease, Bunting is unable to say. There is in the findings a suggestion that the toxin of the disease acts as sharply on the megalokaryocytes as on the lymphoid elements, leading eventually to their necrosis.

115. **Growth of Embryonic Chick Tissues.**—Very wonderful growths from the various organs of embryo chicks of various ages have been obtained by the Lewises. The blood of adult

chickens was used. Not only were growths obtained in hanging drops, but much more extensive ones were obtained in Petri dishes, the diameter of these growths sometimes exceeding one centimeter. There was great similarity in the growths from pieces of liver, intestine, heart, brain, kidney, adrenal, muscle, stomach, thyroid, retina, cornea, etc., of chick embryos from 10 to 21 days old. Radiating strands, migrating cells, membrane formations and vesicles or loop-like places seem to be common to all. The spleen, however, usually sends off migrating cells alone for some time after the culture is made, and only later do the radiating cells appear, if they appear at all. The general similarity of the growths from the various organs leads the authors to the conclusion that the growing tissues are only such as are common to the various organs, namely, connective tissues of various kinds and endothelium of the blood-vessels. They have been able to trace, in some fixed and stained specimens, the endothelium from the blood-vessels of the original piece out into the new growth where the cells of the endothelial radiations closely resemble the cells of the other radiations found there. Recently, they succeeded in cultivating small pieces of embryonic chicks in a nutrient agar both in hanging drops and Petri dishes. The growths have, as a rule, not been so extensive as those in the plasma, but otherwise resemble them. Some specimens show radiations, others membranes and reticular formations with migration of cells. Mitotic figures are found in the stained preparations. The cells often show long irregular processes and move outward from the old piece. The following medium (Ringer) has so far given the best result with chick tissue:

Sodium chlorid	.9	10 c.c.
Potassium chlorid	.042	
Calcium chlorid	.025	
Sodium bicarbonate	.02	
Water	100.	
Agar	.25	
Bouillon		2 c.c.
Sodium chlorid		.0675 gm.

Into a hanging drop of this medium they transplanted two small pieces from the liver of a 9-day chick embryo. Within twenty-four hours cells began to radiate and migrate from the smaller piece into the surrounding medium. In forty-eight hours the growth had exceeded that of the control in plasma and was as extensive as any growth observed in plasma from such a small piece, less than 0.5 mm. in diameter. The entire growth at the end of forty-eight hours was four times the diameter of the original piece and could readily be seen with the unaided eye.

Proctologist, St. Louis

March

116 Rectal and Perirectal Fistulæ. F. C. Wallis, London, Eng.
117 Hypogastric *versus* Iliac Colotomy. F. S. Edwards, London, Eng.
118 Clinical Aspects and Importance of Sigmoid Diverticula. W. H. M. Telling, Leeds, Eng.
119 Chronic Infective Ulceration of the Rectum. H. G. Anderson, London.
120 Submucous Anal Fistula. H. Cripps, London.
121 Treatment of Cancer of the Rectum. H. Drummond, Newcastle-on-Tyne, Eng.

Journal of the Tennessee State Medical Association, Nashville

April

122 *A Supposed Case of Ascites; Echinococcus Cysts? E. M. Beasley, Coal Creek.
123 Tumors of the Urinary Bladder. E. M. Sanders, Nashville.
124 Iritis. R. S. Doak, Nashville.
125 Adenoids. C. B. Wylie, Chattanooga.

122. **Ascites.**—Twenty-one years ago, Beasley's patient, a miner, was kicked by a mule in the right side, over the liver. This gave trouble for some time. Afterward his abdomen began to enlarge, but never gave him any great amount of trouble until January, 1909, when he was unable to go into the mines for six or eight weeks. In August, he was considerably emaciated, complained of some pain over the liver, though no tenderness on pressure. The abdomen was so distended that it was impossible to tell whether the liver was enlarged or not. Diagnosis was ascites caused by cirrhosis of the liver. Beasley gave various hydragogue cathartics and diuretics without any effect. Repeated attempts to aspirate proved futile. Finally operation was advised. On opening the abdomen, the incision filled up with a cheesy mass which soon passed out. After this ½ gallon or more of fluid of an amber color escaped. The incision was then enlarged, when cysts of various sizes from a small marble to a croquet ball, together with a large number of collapsed cysts, began to roll out. It was necessary to rupture a great many of the cysts in order to remove them. The abdominal cavity was completely filled with these cysts. Some of those that were collapsed showed that it had been some time since they ruptured. These cysts had no attachment to anything, but were packed in the abdominal cavity until there appeared no room for more. The small intestines were pressed up against the diaphragm. The peritoneum and all the abdominal organs had a yellow anemic appearance. Their walls were considerably thickened, and had a rough granular feel. The patient died thirty-six hours after operation. Beasley's final diagnosis is echinococcus cysts of the peritoneal cavity.

Journal of Ophthalmology and Oto-Laryngology, Chicago

March

126 Metastatic Gonorrheal Conjunctivitis. W. R. Murray, Minneapolis.
127 Relationship of Rhinology and Orthodontia. A. J. Hill, Canton, Ohio.

Medical Herald, St. Joseph, Mo.

April

128 One Year's Experience in a Neurologic Hospital. J. Collins, New York.
129 *Colica Mucosa. E. H. Thrailkill, Kansas City, Mo.
130 Medical Expert Opinion Evidence, and the Proposed Law Thereon—Medical Expert Opinion is Hard Earned Property. C. H. Hughes, St. Louis.

129. **Colica Mucosa.**—The following classification of these cases is made by Thrailkill. (1) Those due to a motor and sensory neurosis he designates colica mucosa simplex; (2) those due to extra-colonic conditions, causing an interference with the movement of the fecal discharges, he designates colica mucosa reflexa; (3) those due to an extension of an inflammatory process from the rectum or appendix, or when due to the retention of hardened fecal masses, foreign bodies or of the prolonged use of drastic cathartics, causing an inflammatory condition, he designates mucous colitis.

Dominion Medical Journal, Toronto

April

131 Untoward Results of Delayed Operations and of Incomplete Operations. A. Primrose, Toronto.
132 Forecasts of Medical Practice in the Future. T. D. Crothers, Hartford, Conn.

Woman's Medical Journal, Cincinnati

April

133 Arterial Ligation for Irremovable Cancer of the Pelvic Organs. W. S. Bainbridge, New York.
134 *Functional Periodicity in Women and Some of the Modifying Factors. C. Mosher, Palo Alto, Cal.

134. **Functional Periodicity in Women.**—Mosher defines menstruation as a periodic flow of blood from the uterus of a woman, occurring at fairly definite intervals (reckoned from the first day of the onset of the flow to the first day of the next onset) in the same individual, but the intervals varying in different individuals, this function being unattended with pain or incapacity due to it as such. Mosher says that if we can divorce our minds from all preconceived notions in regard to this function, be they derived from individual experience, sex tradition or accepted teachings, and consider it as we do the other periodic functions, this definition will not seem unreasonable. In the first place, she continues, it must be admitted that there is no reason for treating this function differently from the other periodic functions, such as sleep, digestion, defecation and urination, which likewise have their departures from the normal. In the second place, the observers of menstrual disturbances do not by any means agree as to the numbers affected or the degree of the infirmity. Moreover, the various bodies of statistics giving the percentage of women suffering at the menstrual period have all been based on single statements from women examined. Mosher is convinced that many of the so-called dysmenorrheas are not dysmenorrheas at all, but coincident functional disturbances in other organs. It is highly suggestive that the symptoms coincident with low blood-pressure usually are slight, in busy, active women, as in men. When the attention is of necessity directed to so obvious a process as the menstrual flow, untrained women,

especially if without absorbing occupation, naturally refer their lessened sense of well-being and diminished sense of efficiency, which may accompany the lowered general blood-pressure occurring near or at the menstrual flow, to the function of menstruation.

In a group of average women, Mosher has produced a marked improvement at the menstrual period by using so simple a measure as deep breathing. All constricting dress having been removed, the women, in the recumbent position and with knees flexed to relax the abdominal muscles, have done deep breathing once or twice a day during the menstrual period, with the result that all pelvic sensations, depressions and minor symptoms usually included in the term dysmenorrhea have disappeared. In a number of cases also the period has been shortened more nearly to conform to the period of principal flow. These experiments, Mosher thinks, tend to emphasize still further that the upright position, the force of gravitation and constricting dress are conjoined factors in hindering the circulation of the blood from the pelvis to the heart, and are therefore important factors also in producing dysmenorrhea. Since in women of the uncivilized races we find the minimum of flow with no disability and perfect functioning, there can be no danger in gradually lessening by such physiologic methods the period of prolonged pelvic congestion.

American Journal of Surgery, New York

April

135 Duodenal Ulcer. R. T. Morris, New York.
136 Eleven Successful Operations for Fractured Femur. J. B. Walker, New York.
137 Deformities of the Nasal Septum and Their Correction. C. G. Crane, Brooklyn, N. Y.
138 Surgery of the Thyroid. J. E. Jennings, Brooklyn, N. Y.
139 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
140 Bismuth Paste in Mastoid Surgery. C. J. Imperatori, New York.
141 Cholelithiasis and Cancer of the Gall-Bladder Involving the Abdominal Wall. W. H. Luckett, New York.
142 A Case of Supernumerary Spleen. A. W. Blain, Detroit, Mich.

Journal of Abnormal Psychology, Boston

April-May

143 Psychotherapy and Re-Education. J. E. Donley, Providence, R. I.
144 Influence of Dreams on Waking Life. E. Jones, Toronto.
145 *Detection of a Case of Simulation of Insanity by Association Tests. E. W. Katzen-Ellenbogen, Boston.
146 The Psychopathology of Hysteria. I. H. Coriat, Boston.

145. Detection of a Case of Simulation of Insanity.—In the case reported by Katzen-Ellenbogen, the association test proved very satisfactory. In his general discussion of the subject the author points out that psychology, even in its present adolescent state, can be of assistance in problems of practical life, although it would be entirely wrong to contend that by the association test the truth of a person's statement could be positively determined. Indeed, if the association test were to be used for this purpose, he should prefer to refrain from the use of it altogether. He believes, however, that by skilful application to certain cases, the association test may prove a very valuable addition to many tests in criminal investigating work, as has been lately shown by the Bertillon methods, etc., and be of great assistance in many instances for clearing away doubts as to the truthfulness of witnesses.

In the case under review Katzen-Ellenbogen worked with a man wholly unprepared and incapable of understanding the purpose of the investigation, ignoring the facts that a hesitation, the change of word in the reproduction, were the very instances which would most convincingly tell against him. Considering even the circumstance of his knowing these facts, of his even being a psychologist quite skilful in psychologic technic, he would be equally unable to control the form of his answers and the time of associations, even to a fraction of a second. The attempt to control his answers or prepare them beforehand would incriminate him more than anything else. In this same way a refusal to cooperate might be equally harmful as a result. This argument in favor of the association test is rather directed to the sceptical students of law, as the psychologists themselves are more inclined toward an optimistic than a pessimistic view of the success of these tests. The criminal himself would hardly object to this form of investigation, as it would rather impress him with the fact of his having been cleverly overtricked; to the very end both he and the examiner are able to remain on friendly terms, as it happened in the case reviewed.

Albany Medical Annals

April

147 What is Psychotherapy? N. A. Pashayan, Schenectady, N. Y.
148 Surgical Treatment of Goiter. E. MacD. Stanton, Schenectady, N. Y.
149 Carcinoma of the Stomach, Gall-Bladder, Pancreas and Ducts. W. P. Faust, Schenectady, N. Y.
150 Mucous Disease. C. F. Clowe, Schenectady, N. Y.
151 Differential Diagnosis of Early Carcinoma of the Stomach and Benign Subacidities. J. Meyers, Albany, N. Y.

Archives of Ophthalmology, New Rochelle, N. Y.

March

152 A Useful Addition to the Test Chart. E. F. Snydacker, Chicago.
153 Two Cases of Interstitial Keratitis of Sympathetic or Syphilitic Aspect. J. Santos-Fernandez, Havana, Cuba.
154 Optic Atrophy from Traumatic Asphyxia. F. J. Parker, New York.
155 Early Changes Occasioned by the Invasion of the Eye by the Cysticercus. G. Cirincione, Palermo, Italy.
156 Traumatic Enophthalmus. A. Birch-Hirschfeld, Leipsic, and Meltzer, Wedel.
157 Influence of the Accommodation on the Ocular Tension in Vertebrates. C. Hess.
158 Comparative Studies of Miosis Due to Light and to Convergence, and of the Action of Atropin and Eserin on the Iris and Ciliary Muscle, with Remarks Concerning the Form of the Pupil. F. Kanngieser, Marsburg.
159 Extent of the Pupillo-Motor Area of the Retina. F. Best, Dresden.
160 A New Method of Examination for Double Images. W. Hess, Zürich.

Buffalo Medical Journal

April

161 Recent Views Concerning Treatment of Cancer, Based on its Nature. R. Park, Buffalo.
162 The Midwife. P. W. Van Peyma, Buffalo.
163 Double Inguinal Strangulated Hernia in a Cryptorchid. L. G. Hanley, Buffalo.

Journal of Cutaneous Diseases, New York

April

164 Pellagra in Ohio. W. T. Corlett and O. T. Schultz, Cleveland.
165 A Fatal Case of Bullous Dermatitis. S. Pollitzer, New York.
166 Problems in Metabolism Occurring in Patients with Certain Diseases of the Skin. L. D. Bulkley, New York.
167 Prurigo, and the Papule with the Urticarial Basis. O. H. Holder, New York.

St. Paul Medical Journal

April

168 Christian Science. J. Knott, Dublin, Ireland.
169 Antituberculosis Work in Minnesota. C. Easton, St. Paul.

Louisville Monthly Journal of Medicine and Surgery

April

170 A Dozen Obstetrical Don'ts. J. G. Cecil, Louisville.
171 Ethmoiditis. S. G. Dabney, Louisville.
172 Cancer of the Stomach with Gastrectomy. *C. G. Lucas, Louisville.*
173 The LaForce Adenotome. S. G. Dabney, *Louisville.*

Mississippi Medical Monthly, Vicksburg

April

174 The Puerperium. L. C. Feemster, Nettleton.
175 An Untilled Field in Eye Work. E. C. Ellett, Memphis, Tenn.
176 The County Society. A. J. Newman, Acona.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

March 25

1 Indigestion. G. Rankin.
2 Hour-Glass Contraction of the Stomach. R. P. Rowlands.
3 *Acute Dilatation of the Stomach; Gastrotomy; Recovery. G. G. Farquhar.
4 *Treatment of Appendiceal Abscess with Pure Phenol and Iodoform. A. E. Maylard.
5 A Case of Idiopathic Dilatation of the Colon. W. Leggett.
6 *Experiments on Cold-Chamber Treatment. J. G. Thomson and R. Ross.
7 *An Analysis of 326 Cases of Asiatic Cholera. H. Stevens.
8 The After-History of Thirty Cases of Movable Kidney Treated by Operation. A. R. Short.
9 The "Cardio-Splanchnic Phenomenon" of Abrams. W. Gordon.

3. Dilatation of the Stomach.—Nearly all the recorded cases of acute dilatation are alike in obscurity of cause and fatality of termination. Farquhar cites a case in which one cause was not only clear, but removable, and the result was uninterrupted recovery. A young woman, aged 23, was advised by a "wise woman" to eat figs in order to burst a small abscess in the axilla. She ate nearly a pound of dried Turkey figs at 11 a. m., Dec. 24, 1910. Two hours later, ineffectual retching set in with abdominal pain, which continued with increasing severity all day and the following night. The bowels moved slightly in the evening. The girl had several alarming attacks of breathlessness in the night. Farquhar was summoned at 9 a. m. the next day. The abdomen was not distended, and moved slightly with respiration. There was a general slight increase of resistance and a diffuse tenderness, most noticeable between the umbilicus and the left anterior superior spine. The pain had come on gradually and was now severe, especially in the epigastrium, but also in the left iliac region. The pulse was 84 and the temperature normal. After examination she sat up with a sudden cry and gasped for breath; the pupils dilated fully, and showed momentarily a slight red reflex. For about ten minutes she looked as if she might fall back dead. When she regained her breath, a little brandy and water was given and she began to retch, but only a little fig pulp came up. As this seemed too thick to flow through a stomach tube, none was passed lest it should provoke another attack of dyspnea. One hour later, a slightly distended dull area could be made out below and to the left of the umbilicus. An enema of soap and water was ordered and hot applications to relieve the pain, but no morphin was given at this stage.

Twenty-nine hours after the onset of pain and vomiting, the abdomen was opened. A large swelling like an ovarian cyst presented in the wound. It was tympanitic above but dull below, and was found to fill the whole of the front of the abdomen. It was recognized as an enormously distended stomach, the greater curvature being hidden below the pubis, and the lesser curvature appearing like a vertical chink between the inflated halves of the organ. The dilatation seemed to extend to the second stage of the duodenum. An area of the stomach was drawn forward and packed off with gauze from the peritoneal cavity. A small incision was made to allow gas to escape. Fluid containing fig juice and emitting a strong vinous odor, flowed freely for a time, and then masses of half-masticated figs were removed with a scoop. The pylorus and the first part of the duodenum were found to be dilated sufficiently to admit three fingers. When all the contents had been removed, the stomach contracted gradually till the greater curvature was just below the umbilicus. The wound in the stomach was closed in three layers, and the abdominal wall brought together in the usual way without drainage. Recovery was uneventful and complete.

4. **Treatment of Appendiceal Abscess.**—The striking inhibitive effects of phenol when used for external conditions led Maylard to venture on its employment in cases of appendiceal abscess in which the extreme offensiveness of the discharge and the necrotic processes in the appendix suggest conditions not altogether unlike those met with in traumatic gangrene. The abscess cavity is freely wiped with a small gauze swab soaked in pure phenol. An effort is made to reach every part of the cavity. A dry swab is then introduced to soak up any of the remaining acid, and immediately thereafter any amount, up to a half a teaspoonful, of iodoform is put into the cavity, and with a blunt instrument smeared over its walls. A rubber drainage tube about a quarter of an inch in diameter is conducted to the lowest part of the cavity, and on one side of the tube a narrow strip of iodoform gauze is packed in zigzag fashion, just sufficient to fill the cavity; this, with the tube, is conducted out of the abdomen about the center of the wound. The after-treatment is as follows: On the second day after the operation, the iodoform gauze packing is partially removed; on the third day it is completely removed; and, however fetid may have been the pus at the time of operating, the plug will be found to be perfectly "sweet." On the fifth or sixth day the drainage tube is taken away, and on the tenth day the stitches are removed. At the end of four weeks the patient is allowed up.

In sixteen out of the twenty-seven cases cited by Maylard, the abscess was reached by the ordinary "gridiron" incision, neither muscle nor aponeurosis being divided across the direction of the fibers. In twenty-five cases out of the twenty-seven, the appendix was sought for and removed. In one of the remaining two it was only partially removed, as a portion had disappeared, while in the other it could not be found. Every patient recovered, and in none were there any subsequent complications, such as subdiaphragmatic abscess, pylephlebitis, pneumonia or other conditions suggestive of septic absorption or local accumulations of pus. The pulse and temperature usually fell within twenty-four hours. The subsequent results of operation were traced in twenty-five out of the twenty-seven cases, and nineteen of these twenty-five patients were seen and examined. With the exception of the twenty-seventh patient, who had only been operated on a month previously, the interval between operation and report ranged from three months to four and three-quarter years. An examination of these results shows: 1. When the "gridiron" incision was employed, in ten out of fourteen cases there was some bulging of the cicatrix, mostly slight and in almost every instance at the place where the drainage tube and gauze packing emerged. 2. When the internal oblique and transversalis muscles were cut across by extending the incision upward, three out of six cases showed bulging, the protrusion being in one case at the seat of exit of the drainage tube, and in the other two at the lower part of the cicatrix. 3. When the internal oblique and transversalis muscles were cut across by extending the incision downward and inward, the three cases so treated showed bulging. Maylard is convinced that, when proper precautions are taken to protect the general peritoneal cavity, this method of operating admits of every abscess being opened and every appendix sought for and removed with perfect safety. This method prevents any subsequent septic complications, such as subdiaphragmatic abscess, pylephlebitis, pneumonia, thrombosis and other septic manifestations connected either with the wound locally or with deeper and more distant parts. As drainage is considered advisable in every instance, the probabilities are in favor of a weakened cicatrix at the seat of exit of the tube and gauze, with, later, hernial protrusion; but, provided the incision is of the "gridiron" variety, with no cross division of muscle or aponeurotic fibers, and neither the tube too large nor the packing excessive, the bulging may be only slight.

6. A similar article by these authors was abstracted in The Journal, Sept. 10, 1910, p. 973.

7. **Asiatic Cholera.**—Of 326 cases of cholera occurring in the Funchal epidemic treated in the Isolation Hospital, Funchal, Madeira, in roughly 75 per cent. there was an acute onset; in many it was fulminating. In the remaining 25 per cent. the onset was gradual. The duration of symptoms in those individuals who recovered was from three to ten days. In only 5 per cent. of the cases were cramps in the legs and abdomen absent. After acute symptoms had passed off, about 3 per cent of the patients went into a condition resembling typhoid, with tympanites, slight secondary diarrhea, headache and temperature above 101 F. for more than a week. Some of these gave the Widal reaction in the stronger dilutions, but they all recovered within a fortnight. About 10 per cent. of the patients were chronic alcoholics, and this class of the community seemed especially prone to take the disease. Of the female patients fully 10 per cent. were lactating, which seems a high percentage. There were also five pregnant women among the patients. Of these, four aborted, two between the second and third month and two between the sixth and seventh month; two died, but without any puerperal complications. Among the 326 patients, there were thirty infants under 3 years of age and forty-two persons over 60. The epidemic, comprising about 1.700 cases for the whole island of Madeira, has been disseminated entirely by food and actual contact, and not by means of water supply. It was stamped out by rigid isolation or segregation of all "contacts." Systematic examination of the feces was carried out in the case of all convalescents, all inmates of the "contacts" segregation block, and all hospital employees. Of the 206 convalescents, twenty carried the vibrio in the feces for more than a fortnight after the disappearance of the active symptoms. Out of about 350 inmates of the "contacts" block, only six actually developed the disease, but many who never showed symptoms were found to carry the vibrio in the feces for more than three weeks after being in contact with a patient

Lancet, London

April 1

10 Ankylostoma Infection. A. E. Boycott.
11 *Diagnosis of Gall-Stones. J. Sherren.
12 Congenital Abnormality of the Heart; a Case of Cor Trilocular Biatriatum. J. I. Robertson.
13 *Slight General Enlargement of the Thyroid as Found in School Children. C. W. Hutt.
14 The Fading of Anilin-Stained Microscopic Preparations. A. C. Coles.
15 Extensive Blistering Occurring in an Infant; Diagnosis of Scurvy. S. Bott.
16 *Experiments on Inhibition of Tumor Growth in Rats and Mice, with a Suggestion for an Empirical Treatment in Man. A. S. Grünbaum.

11. **Diagnosis of Gall-Stones.**—Of forty-three patients suffering from gall-stones and operated on by Sherren during the past two years, twenty-six had had indigestion, for which they had been under medical care for long periods; one patient after being treated for gastric ulcer was sent to the hospital on the occurrence of her first attack of colic as a case of perforated gastric ulcer. Another patient had had gastro-enterostomy performed without relief; at operation, Sherren removed 140 small stones from the gall-bladder and one from the common bile-duct. Of these twenty-six patients, twenty had had attacks of biliary colic after periods of indigestion ranging from five months to forty years; in the majority of the cases the history of indigestion was of over five years' duration. The special points in the dyspepsia due to biliary calculi Sherren believes are these: its association with flatulent distention; the frequency with which the patient is awakened at night; the pain is not relieved by taking food, and if associated with vomiting this may not relieve it, but vomiting is unusual. Abdominal examination in these cases may settle the diagnosis; for example, in two of the cases in which Sherren operated, before the onset of colic a distended gall-bladder was distinctly palpable. Tenderness under the right lower ribs is usually present and Murphy's sign may be elicited. Occasionally no physical signs exist. A large proportion of all cases of duodenal ulcer give symptoms enabling a certain diagnosis to be made, the most important being hunger pain relieved by taking food and waking the patient in the early hours of the morning. In these cases the ulcer is in the first part of the duodenum. These symptoms are never produced by gall-stones. There are cases, however, in which the symptoms of gall-stones are mimicked closely by those due to an ulcer in the second part of the duodenum. Cases of this nature are, however, unusual. Among the forty-six cases of chronic duodenal ulcer that Sherren has operated on before perforation has taken place, the symptoms in three simulated those due to gall-stones, and in these the ulcers were situated in the second portion of the duodenum.

13. **Enlargement of Thyroid.**—Hutt calls attention to the fact that slight general enlargement of the thyroid is fairly common in some districts. The number of cases investigated, unfortunately, does not warrant any very definite conclusions.

16. **Inhibition of Tumor Growths.**—On the assumption that some kind of protective substance might be formed in animals affected with epithelioma, the authors injected the serum of a mare having epithelioma of the vulva into some cases of cancer, more especially one of uterine cancer. A violent reaction followed each injection (which was made locally), and the case was modified from an inoperable to an operable condition. Both operation and further treatment were refused, and when the patient returned later, renewed treatment with the serum from another mare failed to reproduce the former effect. Later experiments showed that in rats, regression of inoculated growths may follow the injection of epitheliomatous horse serum and also of simple horse serum, and that this regression occurs in the greater proportion of treated than of untreated rats. Another quite different series of experiments revealed the curious and interesting fact that it was not possible simultaneously to produce immunity against cobra venom and to retain susceptibility to new growth inoculation in mice and rats, nor, conversely, after successful inoculation with tumor, to produce immunity to cobra venom. If the tumor were already present, and continued to enlarge, the animal succumbed to a few ordinarily sublethal doses of cobra venom. On the other hand, in those animals in which immunity could be established, growths which had already reached a size of 1 cm. in diameter would regress.

The inference from this series of experiments was that if the treatment caused the regression, such regression must be due to some antibody or antibodies formed as the result of this active immunization. If this were so, passive immunization with antivenom serum should produce similar effects. Therefore, a series of animals with well-grown tumors was treated with antivenom serum. Regression took place only when the growths had not exceeded about 1.5 cm. in diameter. The authors feel that the results of these experiments warrant the extension of the treatment to human beings, and at the same time show that quite inoperable cases are not fair subjects for such trial, for it seems not unlikely that similar limitation to that seen in rats will exist in the case of man. Three human patients have already received treatment by combined passive and active immunization, but since the mass of tumor was large in each case and was not excised, they were not fair cases for the purpose, although they showed that the treatment in itself was harmless. It is not possible to state whether any lasting effect was produced on the growths, since the patients left the hospital too soon for the formation of a definite opinion.

Annals of Tropical Medicine and Parasitology, Liverpool

March

17 Pathology of Lesions of the Cornea and Skin in Animal Experimentally Infected with T. Rhodesiense. W. Yorke.
18 A Case of Sleeping Sickness Studied by Precise Enumerative Methods. R. Ross and D. Thomson.
19 Trypanosoma Gambiense and Trypanosoma Rhodesiense in Rats, Guinea-Pigs and Rabbits; Periodic Variations Disclosed. H. B. Fantham and J. G. Thomson.
20 Life-History of Trypanosoma Gambiense and Trypanosoma Rhodesiense as Seen in Rats and Guinea-Pigs. H. B. Fantham.
21 Experiments on the Treatment of Animals Infected with Trypanosomes by Means of Atoxyl, Vaccines, Cold, Roentgen-Rays and Leukocytic Extract; Enumerative Methods Employed. R. Ross and J. G. Thomson.
22 Auto-Agglutination of Red Blood Cells in Trypanosomiasis. W. Yorke.
23 A New Genus of Culcinæ from the Amazon Region. R. Newstead and H. F. Carter.

Australasian Medical Gazette, Sydney

February

24 The Work of the Southern District (Australia) Medical Association. H. Stoker.
25 Local Features in Occurrence of Eye Disease. C. G. MacLeod.
26 Endemic Hematuria or Illawarra Red-Water in Bovines and Its Possible Ocurrence in Man. J. B. Cleland.
27 Open Ethyl Chlorid Anesthesia for Minor Operations. R. W. Hornabrook.
28 Pathogeny of Ulcerating Granuloma. C. L. Strangman.
29 *Pneumonia Due to a Gram-Negative Diplococcus. A. S. Vallack.
30 Biologic Properties of the Cholera Vibrio and Other Vibriones. B. Bradley.

29. **Pneumonia Due to a Gram-Negative Diplococcus.**—About thirty cases of pneumonia due to this coccus have come under Vallack's notice, and the features of the disease have been so characteristic that there is little difficulty in differentiating it from pneumococcus pneumonia. In cases of pneumonia due to the pneumococcus, as a rule, only one member of the household is attacked. In the case of pneumonia due to the Gram-negative coccus, other members of the household are attacked by the same germ. The onset of ordinary pneumonia occurs with the greatest suddenness. With the other coccus the onset is not sudden; the patient is ill for several days with catarrh of the upper respiratory tract before the pneumonia supervenes. The temperature of ordinary acute pneumonia is perhaps more characteristic than that of any other disease. In the other disease the rise is more gradual, reaching high-water mark about the third day. The fall is by lysis, and it may take from two to six days or more to accomplish. The toxins of this germ are not nearly so depressing to the heart as those of the pneumococcus. A fair amount of pain may be present, but Vallack has not seen in any case the agonizing pain which may be present in pneumococcus pneumonia. A remarkable difference in the two affections is seen in the comparative absence of distress in this disease. A patient with one whole base consolidated will lie in bed with comparative comfort. The sputum is much more scanty as a rule than in the pneumococcus disease, and may be entirely absent even when considerable consolidation is present. When present it

is of a rusty color and contains numbers of encapsulated diplococci. These are often in large groups comprising fifty or more. They are decolorized by Gram's method. The physical signs of a fully developed case are similar to those of ordinary pneumonia. The stage of suppressed breath-sounds, however, which is common to both diseases, often lasts a good deal longer in this disease than in that due to the pneumococcus. One may find places where the breathing is still suppressed several days after the onset of the disease, while in other places tubular breathing is present. The disease is much less fatal than pneumococcus pneumonia, chiefly owing to the effects of the latter on the heart. Vallack emphasizes that this disease is infectious, and patients should not be admitted to the wards with other patients. Occasionally a patch of this pneumonia takes some time to clear up, giving rise to a suspicion of tuberculosis.

Australian Medical Journal, Melbourne

February

31 Hydatid Disease of the Lung. F. D. Bird.
32 Diagnosis and Treatment of Pulmonary Hydatids. G. T. Howard.
33 Pulmonary Hydatids. D. M. Morton.
34 Prognosis and Treatment of Hydatid of Lung. J. Cooke.
35 A Case of Mediastinal Hydatids. M. L. Williams.
36 The Work of an Army Medical Corps in the Time of War C. H. W. Hardy.

Practitioner, London

April

37 Hodgkin's Disease, from the Surgical Point of View. Sir F. Eve.
38 Hodgkin's Disease and Intermittent Pyrexia. F. de H. Hall.
39 Aspects of Lymphadenoma (Hodgkin's Disease). H. D. Rolleston.
40 *Low Blood-Pressure. W. Edgecombe.
41 A Case of Splenic Abscess; Operation; Recovery. G. N. Pitt and C. H. Fagge.
42 Obesity. L. Williams.
43 Septic Infection of the Intracranial Sinuses. W. Taylor.
44 Treatment of Progressive Descent of the Uterus. E. Scott-Carmichael.
45 Radiographic Demonstration of Lane's Ileal Kink. A. C. Jordan.
46 A Case of Acute Phlegmon of the Pharynx. J. Harper.
47 Immediate Treatment of Retention of Urine in the Male. W. Edmond.
48 Three Cases of Peroneal Paralysis. W. B. Jack.

40. **Low Blood-Pressure.**—Individuals presenting low blood-pressure, Edgecombe says, are subjects with poor circulation, cold hands and feet, and liable to chilblains. He has encountered several examples in which the systolic blood-pressure rarely rose above 95 mm. Hg. By means of baths, massage and exercise, a temporary rise may be effected, during the maintenance of which the objective and subjective signs of defective circulation improve manifestly; but it is difficult to effect an enduring rise in the general level of blood-pressure in these cases, for they are prone, on cessation of treatment, to relapse to their former state. In cases of pure neurasthenia, having as their prominent characteristic, profound fatigue either somatic or psychical, or both, the blood-pressure is also low. A woman had a systolic pressure of only 85 mm. sitting, and 80 recumbent; she was subject to most violent headaches and had been dosed freely and for long periods with the usual headache remedies. A rise in tension of the circulation temporarily afforded relief to the pain. Whether the low blood-pressure in these cases of neurasthenia is the cause or the effect of the extreme fatigue, Edgecombe says is not easy to say. The probable sequence of events is a lowering of blood-pressure by toxic or other causes, and it is the extreme feebleness of the circulation that gives rise to the subjective sensation of intense fatigue. Certain it is that a rise in blood-pressure is an almost invariable accompaniment of improvement. In marked contrast to these is the irritable type of neurasthenic—the "neurotic" individual, who is frequently not a true neurasthenic, but a psychasthenic or a hypochondriac. In these cases the pulse is usually quick and irritable, and the blood-pressure subject to great variation, but generally above the normal and sometimes markedly so. Tobacco raises the blood-pressure and yet heavy smokers frequently have subnormal pressure. In cases of dilated heart, with or without valvular disease, the pressure will sometimes be found low, and a rise in pressure is one of the indications of the progress of the case toward recovery. Edgecombe has seen many examples of the so-called gouty or rheumatic manifestations—lumbago, sciatica, neuritis—which showed a blood-pressure somewhat below normal. Many of these patients have a subnormal acidity of the urine, and are liable almost constantly to a copious deposit of phosphates; and this leads to, or is accompanied by, a state of nervous depression, which is a very real thing to those who suffer from it. The origin of the diminished acidity is digestive, and the nervous depression is due to reflex disturbance from irritation of the sensitive nerve mechanism of the bladder and urethra by the phosphatic urine. It is remarkable how rapidly the blood-pressure will rise and the symptoms disappear if the urine is rendered acid and the phosphates kept in solution. The clinical symptom phosphaturia, in whatever condition it may occur, is usually accompanied by a low blood-pressure, probably for the reason given above. Subacute cases of rheumatoid arthritis in young subjects frequently have a blood-pressure below normal, which rises as the condition improves. Exercise, carefully graduated, improves the tone of the heart and vessels and raises the pressure, while altitude and baths have a marked effect in the same direction.

Annales des Maladies des Org. Génito-Urinaires, Paris

March, XXIX, No. 5, pp. 385-480

49 *Polycystic Disease of the Kidney. (Les reins polykystiques.) Pousson.
50 Segregation of the Urine in the Female Bladder. (Un instrument qui rend exacte l'application du séparateur de Luys chez la femme.) D. Taddei.

49. **Polycystic Kidney.**—Pousson reports good results from operative treatment of polycystic degeneration of the kidney in three typical cases and fair results in forty-two others. The operations do not cure completely, he remarks, but they combat the accidents and complications which increase the gravity of the condition and threaten life. The indications for operation are compression of neighboring organs, pain, hematuria, uremia, oliguria, anuria or suppuration. Nephrotomy is the preferable operation. One patient, a carpenter, is in comparatively good health to-day after nephrotomy early in 1908; he had long suffered from gall-stones. The left kidney was in advanced cystic degeneration. During the three years since the nephrotomy the man has been free from all pain and has worked constantly. In another case, the nephrotomy was done for oliguria, headache, cramps and other symptoms of mild nephritis. Pousson ascribes the affection to some inflammatory process, possibly traceable to some acute infectious disease or alcohol or lead poisoning, the gouty tendency or malaria. The assumption of a causal inflammatory process harmonizes further with the clinical course of the polycystic affection. Nephrectomy should be reserved for the tuberculous cases.

Archives Générales de Chirurgie, Paris

February, V, No. 2, pp. 121-240

51 *Cancer of the Kidney in Two Little Girls. R. Buccheri.
52 Favorable Significance for Prognosis of Early Meteorism After Trauma of the Abdomen. D. G. Zesas.
53 *Sigmoiditis and Infection of the Internal Genitalia in Women. J. Poulain. Commenced in No. 1.

51. **Cancer of the Kidney.**—The cancers were a sarcoma and an epithelioma, both inoperable; the patients were 2 years and 7 months and 3 years old respectively. There was no history of traumatism, and the children were otherwise apparently normal.

53. **Sigmoiditis and Infection of Internal Genitalia in Women.**—Poulain warns that disease of the genital apparatus is very liable to spread to the sigmoid flexure. The microbes find their way by the peritoneum and induce production of adhesions which may cause serious trouble later. On the other hand, inflammation in the sigmoid region as a result of constipation may involve the genitalia and may cause misleading symptoms on the part of the ovaries or Fallopian tubes. These facts explain the predominance of left salpingitis. Whenever the adnexa are presenting symptoms of inflammation, the pains being most pronounced on the left side, he advocates hot intestinal enemas rather than vaginal injections, as, while they have practically the same therapeutic action, they permit

energetic disinfection of the sigmoid flexure. He insists that this should be done systematically before attempting to operate in case of salpingitis or for ovarian cyst, etc. These conclusions are based on nineteen cases, including six from his own experience reported in detail with summaries of the others.

Bulletin de l'Académie de Médecine, Paris

March 14, LXXV, No. 11, pp. 351-385

54 Three Cases of Abscess in the Brain Consecutive to Abscess in the Liver. Coutaud and Peyrot.
55 New Name for Malta Fever. (Sur le nom de Mélitococcie à donner à la fièvre de Malte.) R. Blanchard, Chauffard, Benjamin and F. Widal.
56 Case of Laboratory Infection with Malta Fever. F. Widal.
57 Apparatus for Mixed Anesthesia. (Méthode des mélanges titrés pour l'anesthésie chloroformique.) P. Reynier.
58 Amblyopia with Strabismus; Disuse Its Cause and Exercise Its Cure. (De l'amblyopie strabique.) Lagrange.

Bulletins de la Société de Pédiatrie, Paris

February, XIII, No. 2; pp. 65-107

59 *Infant Feeding. (La ration alimentaire du nourrisson.) J. Comby.
60 *Idem. (Hypoalimentation du nourrisson et insuffisance qualitative de la secrétion mammaire de la nourrice.) E. Gaujoux.
61 Idem. (Les nourrissons hypoalimentés, leurs vomissements, leur réalimentation.) J. Lemaire.
62 Technic for Repair of Cleft Palate. (Division congénitale du voile du palais.) V. Veau.
63 *Persisting Thymus and Mediastinal Adenitis. (Hypertrophie du thymus et adénites médiastinales.) V. Veau.
64 *Sterilization of Abscess Cavities. (Lavage des poches d'abcès froids et chauds.) Ombrédanne.
65 Emotional Jaundice in Children. (L'ictere émotif chez l'enfant. Observation d'un cas suivi d'une petite épidémie familiale d'ictère infectieux.) P. Merklen.

59. **Infant Feeding.**—Comby emphasizes the importance of studying individual conditions, but his general rule is 100 gm. of good milk to the kilogram of weight when the infant is strong and well. This amount represents only 75 calories per kilogram, that is 34 calories per pound of weight, and this is not sufficient for weakly infants or the very young. These need 95 or even 100 calories per kilogram, which would require 120, 130 or 150 gm. of milk.

60. **Id.**—Gaujoux makes a point of analyzing the breast milk when a child is not thriving and states that a woman can increase the amount of milk from one-sixth to one-third by drinking fluids but the nourishing value of the milk is reduced in proportion. He warns further that infants fed artificially may not be getting the proper amount of nourishment as the mothers dilute the milk as directed, not realizing that the milkman has previously watered it.

63. **The Thymus and Glandular Disease in the Chest.**—Veau has removed the thymus in nine cases for disturbances in breathing for which the enlarged thymus was supposed to be responsible. But in two cases, notwithstanding the signs of thymic obstruction and difficulty in breathing and swallowing, attacks of suffocation and dulness over the manubrium, the thymus was found quite small. The whole trouble was an infected gland behind the sternum which Veau easily removed, the operation being followed by complete functional success. Removal of glands above the bifurcation of the trachea, behind the brachiocephalic vein, was very easy by this route which permitted also draining of the upper mediastinum. In these cases of supposed enlargement of the thymus an acute pulmonary affection had preceded the disturbances. In future, he says, he will look for mediastinal adenopathy instead of ascribing the subglottic stenosis exclusively to the thymus in such cases. Another sign that might have been instructive, if heeded, was that the difficulty in breathing seemed to be predominantly below the diaphragm; there was only a little above the clavicle and none above the sternum. The organs in the mediastinum were adherent from the preceding inflammation, so that there was no movement when the chest was opened. These adhesions explain the discordance between the diaphragmatic and cervical difficulty in breathing and this lack of agreement between them should suggest, Veau declares, infection of glands rather than enlargement of the thymus.

64. **Lavage of Abscesses.**—Ombrédanne gives an illustrated description of a puncture device connected with three jars and a bulb with which it is possible to aspirate the contents of an abscess, rinse it out and follow this with a disinfectant, all without changing the cannula. The apparatus can be used also for treating a suppurating gland in the neck; but for this he supplements it by drawing silk through the abscess to make an aseptic seton. The needle can be inserted in the silk and a quart of cleansing fluid sent through the lesion, followed by an iodin solution. The lesion is thus healed with merely two minute incisions, one above and one below.

Lyon Médical, Lyons

March 12, CXVI, No. 11, pp. 449-512

66 Serotherapy of Typhoid. A. Rodet. Commenced in No. 10.
67 Technic for Induced Pneumothorax in Treatment of Pulmonary Tuberculosis. P. Courmont.

March 19, No. 12, pp. 513-552

68 Difficulty in Estimating Extent of Injury in Industrial Accidents Involving the Eye. E. Grand-Clement.

Presse Médicale, Paris

March 18, XIX, No. 22, pp. 209-220

69 *Cultivation of Tissues in Vitro. A. Carrel and M. T. Burrows (New York).
70 *Total Resection of Superficial Idiopathic Varices on the Legs. P. Alglave.
71 Spasm of Esophagus. (Ce que doit être actuellement la conception des spasmes de l'oesophage.) Guisez.

March 22, No. 23, pp. 221-228

72 Laws Regulating the Balance in the Cardiovascular System. A. Martinet.
73 Instrumental Re-Education of the Ear. (La rééducation de l'oreille chez les sourds et sourds-muets par l'emploi d'un appareil microphonique.) E. Laime.

69. **Growth of Tissue in Vitro.**—Carrel and Burrows here review their work in this line, which is already familiar to the readers of The Journal. Some of their most recent communications on the subject were published in The Journal, Jan. 7, 1911, and in the *Journal of Experimental Medicine*, March, 1911.

70. **Resection of Superficial Varices.**—Alglave summarizes his experience with total resection of superficial idiopathic varices in seventy-five cases. This operation restores working capacity and seems to be equally beneficial for the painful and complicated cases and for the less serious. The incision runs from ankle to groin, on the inner aspect of the leg, and the author advocates the operation in every case in which the varices begin to prove painful or annoying. There is no need to wait, he asserts, for subsidence of the phlebitis; but in this case he always ligates under local anesthesia the terminal segment of the internal saphena before operating on it, to avoid danger of embolism. In his cases the temperature dropped at once after resection of the inflamed veins, showing that the trouble was limited to the vein. In varicose ulcer, he resects a lozenge-shaped flap of skin with the segment of the vein, with Thiersch flaps in the rare cases in which there were no signs of healing after ten or twelve days.

Revue de Médecine, Paris

March, XXXI, No. 3, pp. 177-264

74 Elimination of Uric Acid in Connection with the Diet. (Excrétion urique et alimentation.) M. Labbé and L. Furet.
75 *Nystagmus and Myoclonia. (Le nystagmus-myoclonie. II.) E. Lenoble and E. Aubineau.

75. **Nystagmus and Myoclonia.**—Lenoble and Aubineau give the details of thirty-eight additional cases of the peculiar myoclonia to which they called attention in 1905 as an affection comparatively common in western France and frequently of a familial type. The constancy and the fixity of the nystagmus render it the most striking of the group of symptoms. In the majority of cases the patients lead an active life with no other evidence of physical or mental degeneracy. The affection is congenital; in the few cases in which it was not noticed until after an intercurrent febrile affection, it had probably existed in a latent form. It belongs in the scale of myoclonias ranging from isolated nystagmus, through the nystagmus-myoclonia to Friedreich's paramyoclonus, Morvan's fibrillary chorea and Gilles de la Tourette's maladie des tics. All are manifestations of a special and obscure morbid condition resulting from a biologic degeneracy.

Archiv für Kinderheilkunde, Stuttgart

LV, Nos. 3-4, pp. 161-320. Last indexed February 18, p. 545

76 *Acidity of Urine in Infants. O. Lade.
77 Primary Suppurative Parotitis in Infants. A. Bretschneider.

78 Normal Bactericidal Properties of Intestinal Juice. (Zur Frage von der Verminderung der bactericiden Kraft des Dünndarms unter [illegible] innerer und äusserer Agentien.) P. S. [illegible]
79 *Test Breakfast for [illegible] [illegible]nctioning in Children. (Untersuchung [illegible] der Kinder mittels Probefrühstuck.) F. Seiler.
80 Premature Dentition. (Frühzeitige Zahnung.) H. Rosenhaupt.
81 *Case of Winckel's Disease. F. Brandenberg.

76. **Acidity of the Urine in Infants.**—Lade discusses what is meant by "acidity" of the urine, the preferable technics for estimating it, the sources for the acidity and its causes, and the variations in acidity under diverse influences. He further reviews extensive clinical experiences and tests of various forms of infant feeding in respect to their influence on the acidity of the urine.

79. **Test Breakfast in Estimation of Stomach Functioning in Children.**—Seiler has applied Sahli's flour soup method (*Mehlsuppemethode*) to a number of children and has found it as instructive as in adults. The children like it, and he reports the findings in a number of healthy children and in others with various diseases, from a few months to 12 years and older. The details are given for forty-one children examined, including three with gastritis, five with secretory and five with motor anomalies. The findings are like those in corresponding conditions in adults, and exact differentiation is equally important for both children and adults, he declares, to permit proper treatment.

81. **Winckel's Disease.**—Brandenberg has been able to find in the literature about fifty cases of this disease. It is characterized by cyanosis, bloody urine, hemorrhage and icterus. Most of the cases appeared in epidemic form in Germany or Russia in new-born infants, only a few of whom survived. He reports a case personally observed, with necropsy. An infectious factor seems evident. Baginsky asserts that simple jaundice, acute fatty degeneration or Buhl's disease, and Winckel's disease are probably only varying degrees of the same process. The jaundice is evidently the result of the hemolysis.

Berliner klinische Wochenschrift

March 20, XLVIII, No. 12, pp. 509-556

82 Salvarsan in Syphilis. (Ueber die bisherigen Erfolge der Syphilisbehandlung mit Salvarsan und die Aussicht auf Dauerheilung.) M. v. Zeissl.
83 *Salvarsan in Inherited Syphilis in Infants. (Salvarsanbehandlung bei Säuglingen.) A. Döblin.
84 *Resection of the Stomach. (Zur Magenresection.) Pochhammer.
85 *Acute Gastric Atony. (Zur Lehre von der akuten Magenatonie.) A. Schlesinger.
86 *Two Cases of Acromegaly from Fright. (Akromegalie infolge von Schreck.) P. K. Pel.
87 History of Theories in Regard to Urinary Calculi. (Historiches zur Kenntnis der Entstehung von Harnsteinen.) E. Schepelmann.
88 Temperature Crises in Tabes Dorsalis. W. Stange and S. Brustein.

83. **Dangers of Salvarsan for Syphilitic Infants.**—Döblin gave salvarsan to six infants and reports that no benefit in the general condition of the child was observed in any instance, the children did not lose their pallor and did not increase in weight thereafter; one strong child died from salvarsan poisoning, although the dose was only 0.03 gm. In another case the infant gained 300 gm. in five days, which he regards as a sign of toxic action of the drug, like the herpes zoster sometimes observed in adults. Four of the infants died, including two in good condition before the injection; this was made subcutaneous or intramuscular in each case and there was little local reaction at the spot. The necropsy findings suggested, he reports, acute arsenic poisoning: acute paralysis of the central nervous system, coma, severe injury of the intestines with diarrhea, drop of the blood-pressure and total paralysis of the contractile elements of the mesenteric capillaries, the so-called splanchnic paralysis. The edema in the mesenteric and subcutaneous fat tissue was evidently the result of arsenic paralysis of the capillaries. The experiences related indicate, he thinks, that 0.03 gm. may be regarded as the fatal dose for infants under the age of 3 months. Even this amount does not ward off recurrence, and as improvement in the manifestations of the syphilis may be observed, as in one of his cases, even with so small an amount as 0.025 gm., it seems reasonable to accept for infants under 3 months from 0.01 to 0.02 gm. as the tolerated dosage, that is 0.005 per kilogram of body weight.

84. **Operative Treatment of Stomach Disease.**—Pochhammer comments on the constantly improving end-results of surgical treatment of non-malignant stomach affections, especially ulcers and their sequels, but adds that most surgeons now regard a cancer of the stomach as already inoperable when so advanced as to be diagnosed with certainty. He insists that while the ignorance and indolence of patients are largely responsible for the delay in seeking surgical aid, a not inconsiderable share of this responsibility should be laid at the door of the so-called stomach specialists. This, he declares, will have to be proclaimed openly and loudly. These stomach specialists are the ones to whom the victims of gastric affections apply, assuming that some special help may be obtained from them after the family physician, consulted in the first place, has come to the end of his resources. In fact it may be the family physician who advises consulting the stomach specialist. And then several weeks or months of possibly precious time are wasted with all kinds of examinations, tests, lavages and dietetic courses. A tumor is not yet positively palpable; the diagnosis of "chronic gastritis" has a tranquilizing effect at first until suddenly the tragedy begins anew and with increased violence as the symptoms show that the obstruction to the emptying of the stomach has increased, but the stomach rinsings may be continued even then for a short time. By this time, the patient is losing strength rapidly; then the case is regarded as ripe for operative measures; the apparently benign stenosis requires operative intervention, and this discloses carcinoma with extensive metastases. This history is taken from life, Pochhammer declares. It demonstrates the enormous responsibility that rests on the shoulders of the stomach specialists when they attempt to differentiate benign stomach affections which have been causing symptoms for some time from malignant growths. Surgeons, he adds, even when they hold the growth in their hands, may be unable to state positively whether it is benign or malignant. The only means of differentiation is by histologic examination, and the stomach specialists are least of all in a position to do this. He protests specifically against Boas' recent assertion that in practice the time need not be regarded as wasted when a stomach specialist applies symptomatic preliminary treatment to a gastric cancer before it is positively recognized as such. Boas bases this assertion on the premise that only the slowly developing gastric cancers are amenable to operative measures; those which develop rapidly are inevitably fatal, whether an operation is attempted or not. To this Pochhammer replies that while this assumption may tranquilize the stomach specialists it might have disastrous consequences if it were accepted generally by physicians who have not yet fully lost their reverence for authority. There is no physician, he continues, who would not regard it as trifling with a human life, when consulted on account of a dubious tumor in the breast, if he should wait for a long period of observation to watch the further development of the growth instead of insisting on its prompt excision and histologic examination. Gastric affections should be managed on the same principles. Every stomach affection which is not of a transient nature and for which no satisfactory explanation can be found, should suggest the possibility of cancer. And surgeons should reiterate constantly the necessity not only for an early diagnosis but for an early operation. He reports nine cases during the last year and a half with operative treatment. One of the patients was a woman of 34 with extensive carcinoma of the stomach. She had had recurring gastric symptoms for ten years; the cancer had evidently developed in an old ulcer. She has gained 11 pounds during the four months since operation. In another case the first symptoms had been observed four months before the operation, and the tumor required resection of the stomach and of the middle third of the transverse colon. The patient is now in good condition having gained 40 pounds in weight since. The colon stumps were united by lateral anastomosis, which seems, he thinks, to hold better than other technics.

85. Acute Atony of the Stomach.—Schlesinger reports an instructive case of acute atony of the stomach developing in consequence of the sudden sliding down of the viscera as the much debilitated patient got up the seventh day after an operation for retrodisplacement of the uterus. The symptoms subsided under repeated lavage of the stomach, the pelvis being kept raised. The special feature of the case, however, was the feculent vomiting; he regards this as proof that there could not have been occlusion of the upper bowel and, consequently, that the acute dilatation of the stomach could not have been secondary to an arteriomesenteric occlusion which some accept as the primary phenomenon in acute postoperative dilatation of the stomach. It is the first case on record, he says, in which acute atony of the stomach was unaccompanied by occlusion of the upper bowel. The case further shows, he declares, the beneficial action of raising the pelvis to remedy conditions, instead of the ventral decubitus which some have advocated for this purpose. With the pelvis raised it is much easier to rinse out the stomach; the stomach sinks down into its normal place and the small intestine follows it, thus relieving the traction on the mesentery. In another case, the pelvis was raised high for twenty-four hours, the patient being kept thus on the operating table for twenty-four hours, the stomach being rinsed out every hour at first and then at longer intervals. He thinks that anything less than these measures would have failed to save this patient. It is not enough to raise the pelvis occasionally for a time; it must be kept raised or the traction on the nerves and mesentery returns again. He never found it necessary to turn the patient on the side. An important adjuvant measure is to supply plenty of water by the rectum or by saline infusion. Large amounts of water accumulate in the stomach and are evacuated by the lavage, and it is of supreme importance to restore fluids to the body in some other way. Application of electricity to the stomach may also prove useful. In conclusion, Schlesinger reports experiments on dogs to induce acute atony of the stomach.

86. Acromegaly from Fright.—A fire in the home or gas explosion was the cause of the fright in the two cases reported. One patient was a housemaid, about 21 years old; the other was a woman of 31, six months pregnant. Menstruation was arrested at once in the case of the younger woman and there was no sign of the menses for several months, then only for two or three months; since then there has been complete amenorrhea. Menstruation did not return after the childbirth in the other case. The other symptoms of the acromegaly developed more gradually but the typical picture has persisted to date, four and sixteen years respectively after the fright.

Deutsches Archiv für klinische Medizin, Leipsic

CII, Nos. 1-2, pp. 1-216. Last indexed March 18, p. 856

89 Tissue Changes Cause of Lessened Resistance to Infections in Diabetes Mellitus. (Ursache der verminderten Resistenz des Diabetikers gegen Infektionen.) E. Handmann.
90 Metabolism During Catatonic and Paralytic Stupor. Eighteen Cases. (Zur Kenntnis der Stoffwechselverlangsamung.) E. Grafe.
91 Clinical and Anatomic Study of Syphilitic Cardiovascular Disease. (Syphilitische Herz- und Gefässkrankheiten.) H. C. Jacobaeus.
92 *Apparatus for Passive "Hill-Climbing" During a Bed-Rest Cure for Heart Disease. (Ruhekuren für Herzkranke in Verbindung mit passiven Bewegungen.) T. Büdingen.
93 Isolated Agraphia in Case of Brain Tumor. E. Forster.
94 Oxygen Ions in Stomach Content. (Die Sauersstoffion-Konzentration im Mageninhalt.) J. Christiansen.
95 Experimental Research on Action of Epinephrin in Kidney Disease and in Health. (Blutdrucksteigernde Wirkung des Suprarenins bei gesunden und nierenkranken Tieren.) B. Scholz.
96 Anemia-Inducing Action of Bacterial Hemolysins. L. Fejes.
97 Metabolism of Matter and Energy in Fever. (Stoff- und Kraftwechsel im Fieber.) H. Senator and E. Grafe.
98 Heart Block from Primary Heart Tumor in Five-Year-Old Boy. (Herzblock, bedingt durch primären Herztumor.) H. Armstrong and J. G. Mönckeberg.
99 *Traumatic and Renal Diabetes. (Einige ätiologisch bemerkenswerte Diabetesformen.) W. Weiland.
100 Determination of Viscosity of the Blood. (Zur Technik der Viskositätsbestimmung.) G. Kagan.
101 Ring-Bodies in the Blood in Anemia. K. E. Russow.

92. Passive Exercise in Heart Disease.—Büdingen has been protesting for years against the application to actual heart disease of Oertel's method of exercise treatment for the obese with weak heart muscle. On the contrary, he insists, patients with heart disease should be guarded against the slightest extra demands on their hearts and should be kept in bed during periods of extra weakness on the part of the heart. At the same time it is important for them to exercise without the effort of voluntary movements. Exercising the legs is the best means in such cases to divert the blood from the heart, to improve the peripheral circulation and to stimulate the vital processes generally. He has been trying to contrive an apparatus which would exercise the patient without the slightest active participation on his part, and the apparatus as perfected after nearly two years' experiments is here described and illustrated. The patient lies on the back, the legs fitting into shallow troughs which are lifted in turn by the automatically working apparatus stationed at the foot of the bed and run by an electric motor, the patient being able to start and stop it at will by a touch to the chain in his hand. The movements imparted to the limbs are those of walking or hill climbing, and the patient can thus obtain the benefits of the active exercise without the least strain on his heart. Büdingen has the exercise applied two or three times a day for thirty or twenty minutes each time. The benefit in severe heart disease is surprising, even with ruptured compensation; the venous engorgement and edema subside, the liver returns to normal size and the signs of cardiac insufficiency rapidly retrogress. The apparatus has also rendered good service, he states, in cases of intermittent limping, of gout of the ankle, threatening diabetic gangrene and tabetic ataxia of the legs. Among the cases reported in which the passive exercises proved of special benefit is that of a physician of 47 who, before the age of 22, had had four attacks of febrile articular rheumatism which had left aortic insufficiency. Recurring endocarditis with fever nearly every day was kept under comparative control for a year by the bed rest and passive exercise, alcohol rubs and small doses of heart tonics. In other cases cited, the bed rest cure finally restored patients with mitral insufficiency to comparative health so that they could climb hills. Bed rest alone is not beneficial in cases of cardiac insufficiency with high blood-pressure, with or without kidney disease, but when the bed rest is supplemented by the vigorous passive exercise, conditions are improved as if by magic. It breaks up the vicious circle formed when the patient actively exercises while it gives the advantages of active exercise. In a particularly severe case described, the oliguria and dropsy had continued to increase notwithstanding that the patient had lain in bed for two months. Then the exercising apparatus was brought into use and in two more months the dropsy had drained away in the diuresis that followed the exercising and the general health was remarkably improved.

99. Traumatic and Renal Diabetes.—Weiland reports a case in which a wooden pail fell from a height of over 25 feet on the head of a man digging a well. He was unconscious for half an hour but the wound healed without further disturbances. A week after the accident, however, great lassitude, intolerable thirst, polyuria and pruritus developed and after another week the urine contained 4.7 per cent. of sugar. A year later the symptoms still persisted, with 1.7 per cent. sugar in the urine. The patient had been previously healthy, and came of a healthy family with no tendency to obesity or alcoholism. The progressive course of the diabetes in this case confirms the general assumption in regard to the comparatively rapid course of true traumatic diabetes. Weiland is inclined to regard the nervous shock of the accident as more of a causal factor than any pathologic changes at the site of the injury. He describes further three additional cases of renal diabetes, that is, persisting elimination of sugar in the urine without any apparent disturbance in the carbohydrate metabolism. The proportion of sugar in the blood was within normal range. The glycosuria was a casual discovery and the kidneys and other organs were apparently functioning normally. The special feature of the three cases was the lack of hyperglycemia and the absence of the usual subjective disturbances of diabetes, and of polyuria. The patients' weight persisted about the same throughout. It is possible that the diabetes in these cases may have existed long before its clinical discovery. He believes that some disturbance in the kidney parenchyma is probably responsible for this renal form of diabetes, the injury of the parenchyma escaping detection by our present methods of examination. Theoretically this renal diabetes may be classed with alkaptonuria and cystinuria, an anomaly not threatening the vital functions. He adds, in conclusion that it is better to refrain from excess in the articles of food liable to enhance the tendency to the anomaly. At the same time such patients should not be depressed with too stringent dietetic restrictions.

Deutsche medizinische Wochenschrift, Berlin

March 23, XXXVII, No. 12, pp. 529-576

102 *Leukemia. (Behandlung der Leukämie.) M. Sternberg.
103 *Tumors in the Lungs and Pleura. (Zur Klinik der Lungen- und Pleurageschwülste.) A. Fraenkel.
104 *Treatment of Pancreatic Cysts. (Zur Behandlung der Pankreaszysten und -pseudozysten.) W. Körte.
105 Roentgen-Ray Primary Erythema. A. Brauer.
106 *Cystoscopy in Diagnosis of Pregnancy Pyelitis. (Bedeutung der Zystoskopie für die Diagnose und Behandlung der Schwangerschaftspyelitis.) A. Calmann.
107 *Findings in Fundus of the Eye in Inherited Syphilis. (Augenhintergrundsbefunde bei hereditärer Syphilis.) A. Japha.
108 Hemorrhagic Septic Infection of New-Born Infants. (Fall von Buhlscher Krankheit.) G. Röthler.
109 Technic for Intravenous Injection of Salvarsan. (In welcher Konzentration sollen wir die ClNa-Lösung zu unseren intravenösen Salvarsaninjektionen benutzen?) T. v. Marschalko.
110 Idem. (Zur Technik der intravenösen Injektion des Salvarsans.) D. A. Stapler.
111 *Acute Thyroiditis Following Potassium Iodid Treatment. (Thyreoiditis acuta nach Gebrauch von Jodkali.) J. Sellei.

102. **Leukemia.**—Sternberg reviews the typical syndrome and discusses the treatment, emphasizing the importance of Roentgen-ray treatment and keeping the patient under constant supervision, so as to institute another course at the first signs of exacerbations. By this means it is possible to keep the patient in good condition with fair earning capacity for years. One of his patients was thus able to work at his trade of cabinet-maker for two years after comparative retrogression of the myeloid leukemia, dying then of ulcerative endocarditis. In another case a woman of 35 had been treated for weeks without benefit for symptoms suggesting influenza. A second physician was called and he found the spleen enlarged and diagnosed typhoid fever. The patient was anemic, feeble, with irregular fever, bronchitis, enlarged spleen and 450,000 small lymphocytes per c.mm. Roentgen-ray treatment was then applied and by the end of six weeks, the lymphocytes had dropped to 31,000 and the patient was able to take long walks, and this improvement has persisted to date, although the blood is not normal, the hemoglobin declining from 35 to 20 per cent. He is inclined to explain the action of the radiotherapy as partly direct, on the blood-producing organs, and partly indirect, by mediation of substances generated which have an inhibiting action on the production of leukocytes in parts of the blood-producing apparatus not exposed directly to the rays. In some conditions the rays have an opposite effect, that is, they may induce an affection of the blood and lymph-producing organs. Sternberg knows of four physicians who had worked considerably with Roentgen-rays who have died from leukemia or pseudoleukemia and lymphosarcoma. This coincidence must be more than merely casual; they all date from the days when Roentgenologists were less careful about protecting themselves than at present. Sternberg commends Roentgen exposures as the first measure in leukemia; for this institutional treatment is generally necessary, and hydrotherapy can be applied at the same time. During a pause in the radiotherapy or possibly with it, in case the affection is more of the neoplasm order, a course of arsenic may be useful, but he warns against arsenic poisoning, especially herpes, eczema and paralysis as manifestations of arsenic intoxication. The herpes may run into gangrene if the Roentgen exposures are kept up. In one case an eczema of the lips resisted all treatment until the arsenic was suspended, when it subsided at once. In a case of sarcomatosis with leukemic blood findings, the tumors subsided temporarily under large doses of arsenic but the arm became paralyzed and permanent paresis and tremor followed. It is his impression that arsenic is more liable to cause symptoms of intoxication when the lymph and blood-producing apparatus is diseased. He states that organotherapy and salvarsan have no action in leukemia. The main point in treatment is to commence it at the proper time and keep watch of the blood findings in case the leukocyte count is increasing, and suspend the exposures when the blood shows signs of a crisis or when myeloblasts appear in large numbers.

103. **Tumors in the Lungs and Pleura.**—Fraenkel reports three cases of pleural endothelioma leading to diffuse indurations. They all developed rapidly with extensive effusion, intensely hemorrhagic and accumulating again in a few days, and with intense pains, evidently due to traction from and the compressing action of the fibrous bands. In a fourth case the trouble was diagnosed during life as a carcinomatous pleurisy, the diagnosis being confirmed by necropsy. The patients were men between 37 and 48 and a woman of 66. Death followed in from one to two months after the first symptoms of trouble in the pleura.

104. **Treatment of Pancreatic Cysts.**—Körte reports six cases of inflammatory pseudocysts in which Gussenbauer's method of suturing to the skin and draining was successfully applied. In all of these cases the pancreatitis had several times induced symptoms suggesting gall-stone colic. The inflammatory or hemorrhagic effusion is not absorbed and benefit can be anticipated only from its prompt removal as soon as diagnosed. The trouble is in reality an encapsulated effusion or pseudocyst, and probably the cases of recovery reported from this technic have been in cases of this class. When the trouble is a true multilobular cystadenoma, this technic is not sufficient. It was applied twice in a case reported in detail, with only temporary benefit. Then the cystadenoma was radically removed and prompt recovery followed.

106. **Cystoscopy in Diagnosis of Pregnancy Pyelitis.**—Calmann reports four cases which confirm the importance of cystoscopy not only for early diagnosis of the pyelitis but in excluding appendicitis and cholecystitis, in locating the seat of the trouble and in permitting local treatment. In the first case, the patient had been treated for weeks for pregnancy disturbances and cystitis without avail; then cystoscopy disclosed slight hyperemia at the mouth of the right ureter and its catheterization evacuated pus and permitted local irrigation with 200 c.c. of a 1 to 2,000 solution of silver nitrate. All symptoms subsided at once. The same benefit was derived in the second case; the pyelitis developed here during the third month. In another case a chronic nephritis was left after the pyelitis which was in an advanced stage when local treatment was instituted. The macerated fetus was expelled three days after the local treatment; if this had been applied earlier, the death of the fetus might have been prevented as well as the development of the nephritis. It was a question in this case whether to interrupt the pregnancy or treat the kidney pelvis and he decided for the latter as briefer and milder. In two of the four cases the pyelitis was bilateral; in all the turn for the better that followed the disinfection of the pelvis was unmistakable, but a complete cure was not realized at once in any instance, the pus and bacteria persisting to a slight degree until a few weeks after delivery. It is possible that repetition of the procedure might cure completely. He does not advise this direct sterilization of the kidney pelvis as a routine procedure, but only when other measures have failed. It did not prove necessary in five other recent cases of pregnancy pyelitis in his experience.

107. **Eye Findings in Congenital Syphilis.**—Japha has made a practice of having the fundus of the eye examined in every infant showing a tendency to nervous disturbances, at the policlinic in his charge. Among 1,350 ophthalmic patients, in 1909, there were twenty cases of abnormal retina in infants with inherited syphilis, thus in 1.5 per cent. He found further that fully 66 per cent. of infants with inherited syphilis present anomalies in the fundus. Sometimes, with the Wassermann reaction, they are the only signs of the disease and they explain in many cases the convulsions, restlessness and constant crying of the infants. The findings in the fundus are generally bilateral but not always equally severe in both eyes. By this systematic examination, the optic neuritis is detected in its early stage, before it has reached the advanced phase. A peculiar rolling of the eyes, blinking or squint sometimes attracted attention to the eyes, or photophobia and twisting

the head to one side and trembling of the eyelids. The prognosis of the eye disturbance is *favorable if treatment is promptly instituted;* rapid improvement followed in nearly every instance after a course of mercurial treatment. For this he preferred internal administration of from 0.005 to 0.01 gm. of mercury protoiodid twice a day in two or three fifty-day courses. Recurrence was never observed although a number of the children were kept under supervision for years. Hirschberg, however, has *observed recurrence at the ages of* 13, 14 and 22. He only found one case of retinal changes from inherited syphilis in 1,000 ophthalmic patients. Among the typical cases reported by Japha is that of an infant whose only trouble was that it cried a great deal, especially at night. At the age of 3 months the eyes were examined and an areolar chorioiditis was discovered. As soon as antisyphilitic *treatment was started the child ceased crying.*

111. **Thyroiditis Following Iodid Treatment.**—Sellei reported in 1902 a *case in which inflammation and swelling developed* in a previously sound thyroid after the patients had taken 2 spoonfuls of a 5 per cent. solution of potassium iodid. The acute thyroiditis was accompanied by high fever. He here reports a similar case, the acute thyroiditis developing after the first spoonful and becoming more intense after 2 more spoonfuls. The iodid had been given in this case after a course of mercury. The thyroiditis subsided completely in a week. It was evidently a manifestation of iodism, the picture including palpitations and a pulse running up to 120. He is inclined to explain the symptoms as a manifestation of anaphylaxis.

Jahrbuch für Kinderheilkunde, Berlin

March, LXXIII, No. 3, pp. 259-390

112 *Experimental Research on Action of Products of Decomposing Urine. (Versuche über experimentellen Spasmus nutans und über die Einwirkung von Harnzersetzungsprodukten *auf junge Hunde.)* R. W. Raudnitz.
113 Regulation of Heat in Infants. (Die Thermoregulation des gesunden und ernährungsgestörten Säuglings.) P. Heim and M. K. John.
114 Blood-Pressure in Children. *(Blutdruck im Kindersalter.)* V. Salle.
115 Anaerobic Intestinal Bacteria, Especially Those of Butyric Acid Fermentation. F. Passini.
116 Differential Bactericidal Properties of Leukocytes in Respect to Streptococci. (Ueber Unterschiede zwischen septischen und Scharlach-Streptokokken auf Grund bakterizider Reagensglasversuche *mit Leukozyten.) F. Schleissner and* W. Spät.
117 *Anatomic Findings in Stomach of Infant Five Months After Cure of Stenosis of the Pylorus. J. Simon.
118 Two Cases of Congenital External Hydrocephalus. Z. v. Bokay.

112. ***Experimental Research on Injurious Influence of Prod*ucts of Decomposition of Urine.**—Raudnitz has been studying on animals brought up in the dark the development of a clonic spasm of the sternomastoid muscles when they are exposed to the light, the result being a sort of nodding spasm associated with nystagmus. He has also studied the influence of the products of decomposing urine, his attention being attracted to this line of research by a peculiar intense fragility of the bones observed in two children of a family that lived in a room adjoining the general urinal for a large factory, one wall of the room being constantly damp with decomposing urine. It proved impossible to induce in puppies any tendency to osteomalacia or rachitis even when kept *for eight months* in the fumes of their own decomposing urine.

117. ***State of Infant's Stomach Six Months* After Cure of Stenosis.**—The disturbances from stenosis of the pylorus in the case described had never been very severe, and they subsided completely under flaxseed poultices *renewed every two* hours. There was an inherited neuropathic taint, but after subsidence of the symptoms of stenosis the child thrived *normally* for six months but then died on the second day of an attack of pneu*monia.* The stomach was compared with the stomach of a normal child; the findings were extreme hypertrophy by excessive development of the musculature of *the* pylorus and stomach walls. The assumption of a primary hypertrophy of the stomach walls explains the anatomic, clinical and therapeutic data in *these cases* of stenosis of the pylorus in infants. The hypertrophy induces secondarily reflex spasmodic *contracture* of the musculature and thus entails the clinical picture.

Medizinische Klinik, Berlin

March 26, VII, No. 13, pp. 479-518 and Supplement

119 Staphylococcus-Extract Salve and Varnish: An Attempt to Induce Local Immunity. (Ueber einen Versuch, die lokale Immunität für die Praxis brauchbar zu machen.) A. v. Wassermann.
120 *Early Diagnosis of Pulmonary Tuberculosis. (Welche [illegible] neueren *Untersuchungsmethoden* zur [illegible] ungentuberkulose für den praktischen [illegible]
121 Salvarsan in Malaria. (Beeinflussung der Chininfestigkeit durch Salvarsan bei Malaria.) G. B. Bilfinger.
122 Is Acute Appendicitis Due to Inflammation or Obstruction? (Beruht der akute schwere Appendizitisanfall auf Entzündung oder mehr ileusartigen Vorgängen?) Sorge.
123 *Persistent Hiccup. (Fall von heftigem Singultus.) F. Kanngiesser.
124 Dietetic and Physical Measures in *Treatment of Kidney Disease.* (Nierenkrankheiten.) J. Hurter.
125 *Irritation of Optic Nerve by Salvarsan. (Zur Kasuistik der Salvarsantherapie.) A. Jansen.

120. **Early Diagnosis of Tuberculosis.**—Schwalm discusses whether the newer methods of diagnosis are of much assistance to the general practitioner, his conclusion being that the clinical examination of the patient is still as always the main reliance, and that the tuberculin test should not be applied except when there is some indication of incipient pulmonary tuberculosis and it is impossible to determine the facts in any other way. If the tuberculin test is applied, it should be by subcutaneous injection for adults and by the cutaneous method for children. The subcutaneous test should not be applied, he says, outside of an institution as close supervision of the patient is indispensable for its proper estimation; if the temperature is taken by the laity the findings are unreliable. He warns further to be on the watch for the pseudoreaction liable to occur in nervous patients; the only means to exclude it is by a control injection of water alone.

123. **Persisting Hiccup.**—In the case reported by Kanngiesser, the distressing hiccup came on during an attack of influenza in an elderly man. No benefit was derived from a subcutaneous injection of 0.001 gm. of atropin sulphate, which has been *recommended lately for this purpose;* in half an hour the patient's mouth became parched and he felt a burning in the nose but the hiccup was unmodified. After waiting for an hour and a quarter after the injection, the patient was then given in separate glasses a solution of 5 gm. citric acid and of 5 gm. sodium bicarbonate, hoping by the distention of the stomach from the effervescing fluids to act on the diaphragm *from below. The procedure was a complete success,* the hiccup ceasing at once. The patient was awakened in the night, however, by recurrence of the hiccup and repetition of this measure then failed to relieve, as did also the next day rhythmic traction of the tongue and holding the breath. He was then given a little sodium bicarbonate in water, *and the hiccup* ceased at once for a few hours, but returned then and *persisted until the patient* took some warm oatmeal gruel. This arrested the hiccup and had the same effect the next day when the hiccup returned, after which there was no further trouble. Kanngiesser appeals to other physicians to learn if they know of any better measures to arrest persisting hiccup.

125. **Irritation of Optic Nerve Under Salvarsan.**—Jansen states that several days after an intravenous injection of 0.4 gm. of salvarsan, the patient happened *casually to mention* that, commencing four hours after the injection, everything *seemed to waver* before his eyes for three hours. Jansen believes that if it were enquired for, this sign of irritation of the optic nerve (*heftiges Flimmern*) might be found frequent *after injection of this drug.*

Münchener medizinische Wochenschrift

March 21, LVIII, No. 12, pp. 609-664

126 *Cholelithiasis. (Allgemeine Grundsätze für die Diagnostik, Indikationsstellung und Therapie des Gallensteinleidens.) H. Kehr.
127 *Heart and Kidney *Disturbances* with Chronic Constipation. (Herzmuskelinsuffizienz bei chronischer Koprostase nebst Bemerkungen über die bei letzterer auftretende Albuminurie und Zylindrurie.) W. Ebstein.
128 *Diagnostic Inflation of the Stomach. (Zur Technik der *Magenaufblähung.) F. Bardachzi.*
129 Traumatic Myopathy. (Muskeldystrophie und Myotonie *nach* Unfall.) W. Brasch.
130 *Eosinophil Diarrhea in Infants. (Zur Kenntnis eosinophiler Darmkrisen im Säuglingsalter.) L. Langstein.

131 Copper Isolated from Urine and Perspiration of a Worker on Brass. (Isolierung von Kupfer aus Harn und Schweiss eines Messingarbeiters.) E. H. Goodman.
132 Splenic Anemia in Inherited Syphilis and Its Cure Under Salvarsan. W. Schmidt.
133 Technic for Salvarsan Treatment. A. Hauptmann.
134 Typical Coasting Fracture. (Eine typische Rodelverletzung.) Bertram.
135 Improved Technic for Color Ring Tests of Fluids. Schnitter.
136 Paratyphoid Infection. F. Rolly. Commenced in No. 11.

126. **Gall-Stones.**—Kehr comments on the fact that no drugs or medical measures are able to act on the gall-stones themselves; all other measures but direct removal act merely on the conditions resulting from the presence of the stones, especially the inflammation. All that is possible is to keep the stones latent and answer the patient's four questions: "Have I gall-stones?" "Can you feel them?" "Must I have an operation?" and "Is the operation dangerous?" Only in exceptional cases, he continues, is it possible to state positively the presence of gall-stones. Even with his 1,668 gall-stone operations he still makes mistakes in diagnosis of cancer of the gall-bladder, especially when it is associated with empyema. With chronic empyema the temperature may be persistently within normal range in 50 per cent. of the cases. The history is of peculiar importance for the diagnosis of chronic empyema of the gall-bladder and chronic obstruction of the common bile duct, and he makes a point of writing it out and reading it over carefully two or three times to weigh it in all its bearings. A diagnosis based on the history is liable to be more correct than one based on the actual findings at the moment. In the written history we can follow the gall-bladder affection from simple serous cholecystitis to the obstruction of the cystic duct and the accumulation of pus in the gall-bladder, the passage of the stone into the common bile duct or its final perforation into the bowel, and we can trace the various stages of the affection by the presence or lack of jaundice and fever, swelling of the liver and pains. The localization of the pain is frequently misleading. In one case the only tender point was under the left costal arch, suggesting ulcer in the lesser curvature of the stomach, but the trouble was the result of numerous stones in the common bile duct. A high placed appendix may simulate cholecystitis. He states that he has been able to palpate the stones only in two or three out of his total 4,000 patients. Operative treatment is required more for the infectious process and to forestall its spread to other organs than to remove the stones themselves. This infection threatens the liver and pancreas and must be combated by removal of the focus in time, while it is still circumscribed. This is the main aim of treatment, and no time should be wasted with drugs and waters to which the power to dissolve or expel the stones is ascribed. Such measures should be left to quacks, and internists should cooperate with surgeons to check and cure the acute and chronic inflammation. This is best realized by moist heat, purgatives, restriction of the diet and repose, the cholelithiasis having a spontaneous tendency to return to a latent condition so that in 80 per cent. of all cases the colics finally subside spontaneously. The quack claims this 80 per cent. as his "cures," while the physician knows that Nature has wrought the cure and that it often is only a deceptive lull. The only radical cure is by removal of the infectious focus. Among Kehr's other reflections on gall-stone disease is the statement that when there is reason to suspect cancer in the gall-bladder, it is already too late for a radical cure; the patient is doomed. Only when in an operation for gall-stones, traces of incipient cancer are casually encountered, is the patient completely cured of the malignant disease. The loss of the gall-bladder causes no appreciable disturbances, and a new formation of gall-stones in the biliary ducts after cholecystectomy is so rare as to be negligible. Done in time, he reiterates, a gall-stone operation is practically free from danger.

127. **Chronic Constipation in Relation to Heart and Kidney Symptoms.**—Ebstein discusses the albuminuria and tube-casts liable to be found in the urine with chronic constipation or persisting coprostasis, and states that before attempting to estimate the prognosis of the kidney affection in such cases the intestinal functions should be regulated. The pathologic urine may be the result of toxic action from poisons generated in the intestines. The same statement applies to heart disturbances. When the heart is found enlarged or displaced, before assuming the presence of organic disease, conditions should be investigated to exclude displacement of the heart from the pushing up of the diaphragm from below. By removing the causes of this pushing up of the diaphragm—among which chronic constipation takes the first place—the symptoms on the part of the heart, even including those of cardiac insufficiency, may retrogress entirely. He recently reported subsidence of symptoms of exophthalmic goiter in four cases under treatment of chronic constipation by means of large enemas of oil. His report was summarized in THE JOURNAL, February 11, page 467.

128. **Diagnostic Inflation of the Stomach.**—Bardachzi reports from the medical clinic at Prague, in charge of Pribram, that inflation of the stomach with an effervescing mixture or with air alone has been systematically practiced there for years. In one case, however, the ingestion of the effervescing mixture was followed by severe hemorrhage from the stomach, and in another case by severe symptoms on the part of the heart from the pushing up of the diaphragm. Both patients were women in the fifties, and the alarming symptoms soon subsided. Behrend was less fortunate, Bardachzi remarks, as he lost three patients from this cause, the sudden distention inducing perforation of a gastric ulcer in two and of a carcinoma at the cardia in the third patient. For this reason Pribram has abandoned this method except in special cases, and prefers to distend the stomach with air alone. He interposes a glass jar with two mouths between the stomach tube and the tube with the double rubber bulb. If the patient retches during the inflation the vomitus collects in the interposed jar; this method of distention seems to be much less dangerous than with the effervescing mixture, while it permits graduated dosage. In the two mishaps Bardachzi reports, less than a teaspoonful of sodium bicarbonate and half a teaspoonful of tartaric acid were used for the test, each being dissolved in half a glass of water.

130. **Eosinophil Diarrhea in Infants.**—Langstein called attention in 1908 to the passage of mucus and pus by the bowels, occurring suddenly, the mass containing large amounts of eosinophil cells. In a case described here he noticed this sudden eosinophil intestinal crisis, as he calls it, as the first sign of the exudative diathesis; it was speedily followed by facial eczema. The mucopurulent stool in the infant, only a month old, would generally be considered a sign of severe intestinal derangement, but he regarded it as merely the expression of the diathesis and not of an alimentary disturbance in the ordinary sense. Consequently, he made no change in the diet except restricting the amount a little, and the further development of the child confirmed the correctness of these views. The intestinal crisis in these cases may be regarded as similar to what Strümpell calls intestinal asthma in infants; it is not accompanied by a rise in temperature or drop in weight—symptoms scarcely ever absent when it is a question of alimentary or infectious injury.

Wiener klinische Wochenschrift, Vienna

March 23, XXIV, No. 12, pp. 411-442

137 Cholesterinemia in Physiologic Pregnancy. (Biologische Studien über die weibliche Keimdrüse.) J. Neumann, E. Hermann and S. Fränkel.
138 Thymus Not Involved in Blood Production. J. Löw.
139 Technic for Determining Presence of Tubercle Bacilli in the Urine. (Versuche einer Vereinfachung des Tuberkelbazillennachweises im Harn.) R. Bachrach and F. Necker.
140 *Epidemic Endocarditis? (Kann die Endocarditis acuta epidemisch auftreten, und herrscht gegenwärtig eine solche Epidemie in Wien?) M. Herz.

140. **Epidemic Endocarditis.**—Herz states that he has seen so many cases of acute endocarditis at Vienna in the last few months that he asks whether it is possible for this disease to occur in epidemic form. The patients were all between the ages of 6 and 18 and the clinical course was alike in all, beginning with moderate fever without angina or joint symptoms; only later there were pains in one or both ankles in a few cases. Multiple articular rheumatism did not develop in any case, but in the second week there was tachycardia, accompanied later by palpitations, pains in the apex region,

rapid breathing and cyanosis. The myocardium behaved well, seldom showing much dilatation. Another symptom was a tormenting dry cough, especially at night, sometimes brought *on by eating and often followed by vomiting.*

Zeitschrift für Urologie, Berlin

March, V, No. 3, pp. 161-240

141 The Prostatic Secretion. (Das Prostatasekret.) C. Posner.
142 Idem. (Zur Kenntnis der Natur der Prostatakörner.) P. Fürbringer.
143 Bacteria of Normal Male Urethra. (Beitrag zur Gonokokkendiagnostik.) A. v. Wahl.
144 Advantages of "Stiff Silk Catheter" with Hypertrophied Prostate. (Ueber "steife Seidenkatheter," zum Gebrauch bei Prostatavergrösserung.) O. Heyse.
145 Chancroid in the Fossa Navicularis. (Ulcus molle fossae navicularis urethrae.) Tschumakow.

Zentralblatt für Chirurgie, Leipsic

March 25, XXXVIII, No. 12, pp. 417-456

146 *Exposure *of Nasopharynx by Slitting the Lower Jaw and* Separating the Soft from the Hard Palate. (Freilegung des Nasenrachenraumes durch mediane Spaltung des Unterkiefers und Ablösung des weichen Gaumens vom harten.) A. Krogius.
147 Prevention and Treatment of Mediastinal Emphysema. M. Tiegel.

146. **Exposure of Nasopharynx.**—Krogius worked out on the cadaver several years ago the technic he describes with an illustration, and has been commending it for the clinic but only recently had opportunity to apply it himself on two patients. They bore the operation well and the further course was gratifying, while the operation itself was accompanied with remarkably slight loss of blood. It was done for removal of a fibroma in the nasopharynx in both instances. He applied part of the technic in a previous case two years ago but found an inoperable tumor in the pituitary body and the patient died the next day with pulmonary edema. The main features of the technic are the median incision of the lower jaw, enabling the two halves to be turned back on each side, the *tongue being drawn down over the cleft. The soft palate is* then separated from the hard palate by an incision curving across nearly to the teeth on each side. This permits the soft palate to be drawn down on the tongue quite out of the way, giving ample access to the nasopharynx through the gap thus left.

Zentralblatt für Gynäkologie, Leipsic

March 25, XXXVIII, No. 12, pp. 417-456

148 *Anteflexion of the Uterus as Cause of Development of Myomas. (Zur Aetiologie und Prophylaxe der Uterusmyome.) D. v. Ott.
149 High and Low Epidural Anesthesia. (Hohe und tiefe extradurale Anästhesien.) H. Schlimpert.

148. **Anteflexion of Uterus in Origin of Myomas.**—Ott has had opportunity to watch over the later fate of large numbers of women with symptoms indicating anteflexion of the uterus. This experience has demonstrated beyond question, he states, that the venous engorgement and other interference with the circulation in an anteflexed uterus invite the development of myomas which are almost certain to follow. He declares, therefore, that anteflexion should no longer be regarded as a comparatively harmless anomaly which it is unnecessary to correct unless it is causing severe symptoms. It should be corrected without delay by medical or other measures, above all when changes in the parenchyma are already installed. Measures to regulate the circulation in the region, especially gynecologic massage, and measures to render conception possible, such as excision of the cervix, are the most important. In over a third of his patients treated with excision of the portio vaginalis on account of anteflexion, the women, long sterile, bore one or more children. The fibrous bands fastening the cervix in front have to be separated, and it is important, he says, to take the sutures at right angles to the line of the incision so that the row of sutures is sagittal to the cervix. A pregnancy transforms conditions and is the chief aim sought in treatment of anteflexion, and this transformation abolishes the conditions which unmolested lead to myomatous degeneration later. Ott thinks that it is absurd to seek for an explanation for the development of tumors which will apply to all; it is also absurd to reject a working hypothesis because it does not explain all kinds of conditions.

Riforma Medica, Naples

March 20, XXVII, No. 12, pp. 309-336

150 Psychic Disturbances of Gynecologic Origin. (Turbe psichiche d'origine ginecologica.) L. M. Bossi and L. Strofeni
151 Improved Technic for Making Microscopic Sections. (Un mezzo semplicissimo per attaccare automaticamente le sezione microscopiche contemporaneamente al taglio.) G. Pollaci.

Nordiskt Medicinskt Arkiv, Stockholm

XLIII, Internal Medicine No. 3. Last indexed January 7, p. 84

152 Leukocytosis During Digestion and the Influence of Sleep and the Waking State on the Leukocyte Content of the Blood. (Bidrag till frågan om förekomsten af en digestionsleukocytos och till kännedomen om sömnens och det vakna tillståndets inverkan på blodets leukocythalt.) W. Wernstedt.
153 Case of So-Called Pseudoleukemic Anemia in Children. K. O. af Klercker.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

The Destruction of Fleas by Exposure to the Sun. By Captain J. Cunningham, M.D., I.M.S., Offg. Assistant to the Director, Bombay Bacteriologic Laboratory. Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Issued under the Authority of the Government of India by the Sanitary Commissioner with the Government of India. (New Series.) No. 40. Paper. Price, 8 annas. Pp. 27. Calcutta: Supt. Government Printing, India, 1911.

The Experimental Chemotherapy of Spirilloses (Syphilis, Relapsing Fever, Spirillosis of Fowls, Frambesia). By Paul Ehrlich and S. Hata. With Contributions by H. J. Nichols, New York; J. Iversen, St. Petersburg; Bitter, Cairo; and Dreyer, Cairo. Translated by A. Newbold, and Revised by Robert W. Felkin, M.D., F.R.S.E., Late Lecturer on Tropical Diseases, Edinburgh Medical School. Cloth. Price, $4. Pp. 181, with illustrations. New York: Rebman Co.

The Effects of a Number of Derivatives of Choline and Analogous Compounds on the Blood-Pressure. By Reid Hunt and R. de M. Taveau. Hyg. Lab. Bull. 73, U. S. P. H. and M.-H. S., Treasury Department, March, 1911. Paper. Pp. 135. Washington: Government Printing Office, 1911

Reports of the Meetings of the New England Branch of the American Urological Association for the Winter, 1909-1910. Paper. Pp. 37, with illustrations. Dr. Francis S. Watson, President, Boston. Dr. Richard F. O'Neil, Secretary, Boston. Boston: W. M. Leonard, 1911.

Criminal Man According to the Classification of Cesare Lombroso. Briefly Summarized by His Daughter, Gina Lombroso Ferrero. With an Introduction by Cesare Lombroso. Cloth. Price, $2. Pp. 322, with 39 illustrations. New York: G. P. Putnam's Sons, 1911.

Twenty-First Annual Report of the Visiting Nurse Association of Chicago. Incorporated November, 1890. For the Year Ending Dec. 31, 1910. Paper. Pp. 45. Office, Room 1408 Unity Building, 79 Dearborn Street. Mrs. H. K. Tenney, Secretary, Winnetka, Ill.

Ninth Annual Report of the Director of the Bureau of Science [Manila] to the Honorable, the Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science. For the Year Ending Aug. 1, 1910. Paper. Pp. 70. Manila, 1911.

A Radiographic Atlas of the Pathologic Changes of Bones and Joints. By Amédée Granger, M.D., Lecturer on Radiology and Electro-physics, New Orleans Polyclinic. Cloth. Price, $6. Pp. 207, with illustrations. New York: A. L. Chatterton Co.

Medical Diagnosis. By W. Mitchell Stevens, M.D., M.R.C.P., Fellow of University College, London. Cloth. Price, 25 shillings net. Pp. 1571, with 177 illustrations. London: H. K. Lewis, 136, Gower St., 1910.

Die Massenverhältnisse des Herzens unter Pathologischen Zuständen. Pathologisch-Anatomische Untersuchungen. Von Sofus Widerøe. Paper. Pp. 143, with illustrations. Christiania: *Jacob Dybwad*, 1911.

Eighth Annual Report of the Bureau of Science [Manila] to the Honorable, the Secretary of the Interior. By Richard P. Strong. For the Year Ending Aug. 1, 1909. Paper. Pp. 62. Manila, 1910.

Style *Book. A Compilation of Rules* Governing Executive, Congressional and Departmental Printing...Including the Congressional Record. Cloth. Pp. 150. Washington: Government Printing Office, 1911.

Thirty-Fifth Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains. For the Year ending Oct. 31, 1910. Paper. Pp. 50. Henry W. Buxton, Secretary.

Report of the Milk Commission of Philadelphia to the Hon. John E. Reyburn, Mayor of the City of Philadelphia. Feb. 15, 1911. Paper. Pp. 125.

Correct Orthography of Geographic Names. *Revised* to January, 1911. Cloth. Pp. 168. Washington: Government Printing Office, 1911.

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ROBERT KOCH THE FATHER OF MODERN TUBERCULOSIS SCIENCE[*]

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Koch's brilliant career as father of modern tuberculosis science began, of course, on that memorable evening of March 24, 1882, when he gave to the world the result of his painstaking work. It was the usual monthly meeting of the Physiologic Society of Berlin, but it was perhaps the largest gathering which that body ever had. Koch's paper was announced under the title, "The Etiology of Tuberculosis." Taking into consideration what Koch had given to science before along the same lines (I refer to the discovery of the spores of the anthrax bacillus and his concomitant bacteriologic studies), the hearers were, of course, expectant and looked for great things in store for them. It was characteristic of Koch's modesty and true scientific spirit that he had preferred to refrain from talking about his researches in tuberculosis until he could conclusively prove his thesis to the satisfaction of everyone and show absolutely accurate results. To students of bacteriology it must be recalled that Koch was the first to seek the production of a solid medium for the purpose of getting pure cultures, and it was only after he was in possession of such a medium that he attempted to isolate the germ found in tuberculous tissue.

It is of historical interest that on the evening of March 24, 1882, after Koch had finished reading his paper, there was no applause nor any enthusiastic manifestation of approval and for the first time in the history of that society, a paper, though listened to with the most profound and respectful silence, was not discussed. The facts presented by that master of bacteriologic science were too convincing for discussion. The audience looked expectantly to that most honored member and veteran debater, the father of cellular pathology, the immortal Rudolph Virchow, but he too remained silent. He felt that another great master in medicine had arisen and that the evidences of Koch's conclusions did not permit any doubt or dispute. The original communication announcing the discovery of the tubercle bacillus as the prime and only cause of tuberculosis appeared in the *Berliner klinische Wochenschrift* of 1882 (No. 15, p. 221). It is a masterpiece of scientific demonstration.

It may be interesting to some to know that access to an exact reproduction of this paper[1] can be obtained. The editors of the periodical referred to very justly stated that a more fitting memorial could not be printed at the time of Koch's death than that important paper which gave rise to all our modern tuberculosis research work, and at the same time gave to its author a well-deserved recognition and world-wide reputation.

In his paper Koch did not fail to pay tribute to the works of Villemin, Cohnheim, Salomonsen, Baumgarten and Tappeiner, who had given us conclusive proof that tuberculosis was a transmissible disease, but through Koch, and Koch alone, we have come to know the actual factor of infection and direct cause of all tuberculous diseases. It is he who showed us the presence of the germ in the pulmonary secretions and involved tissues, and also, to a minor degree, in other secretions of man and beast afflicted with tuberculosis. It is because of this knowledge that the new science which we might call modern prophylaxis of tuberculosis was created.

And now, after a lapse of nearly thirty years since the memorable discovery, we can statistically prove, beyond the shadow of a doubt, that, thanks to the rational, practical yet simple methods of prophylaxis which soon followed the discovery of the bacillus of tuberculosis by Robert Koch, the mortality from tuberculosis has been on a steady decrease in nearly all civilized countries.

When we consider that the present morbidity and mortality from tuberculosis in the countries which have adopted rigorous antituberculosis measures is in some instances two-thirds, and in some even one-half, what it formerly was, we must also admit that the material wealth which is the gain of thousands of communities, because Koch lived and labored, is beyond human calculation. Our sociologists and economists have estimated the value of a single human life as an economic asset of $5,000 to a community. Thus the figures in material gain to the world at large for which this one man is responsible must stagger our imagination. But we as physicians do not look on a life as representing a merely financial asset to the community. We come into too close contact with human suffering and sorrow for that. We rather emphasize the value of the discovery of our great Koch by the number of fathers, mothers, wives, husbands and children who were saved from an untimely death. We think of the tears and sorrow, of the anxiety and worry spared to untold numbers; we appreciate the joys and happiness which were preserved to thousands because the great white plague did not enter their homes. All this preservation of human joy and happiness has been brought about because of one single discovery of Koch, and the resulting indication of how to prevent disease.

But this phase of our medical science, which is truly preventive medicine, is not the only one whereby we as physicians and the world at large have been benefited by Koch's discovery. The presence of the bacillus in the sputum gives in doubtful cases a well-nigh irrefutable evidence of tuberculous infection of the respiratory

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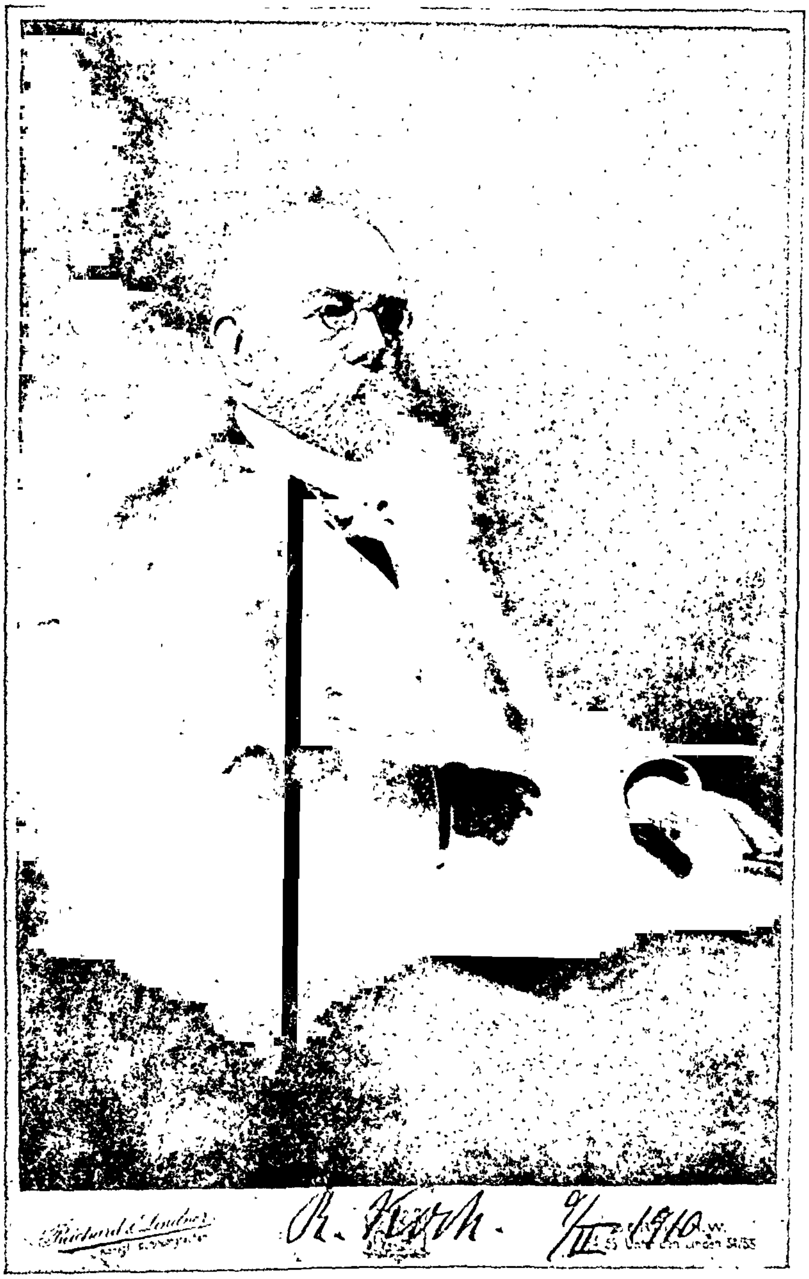
[*] Address delivered on the Koch-Memorial Evening, March 27, before the Laennec Society for the Study of Tuberculosis, of Johns Hopkins Medical School and Hospital, Baltimore.

[1] Ztschr. f. Tuberk., July, 1910, xvi, No. 2.

tract. In the discovery of tuberculin Koch has given us another adjuvant of great value in the diagnosis of tuberculosis diseases in man and animal.

A word regarding tuberculin as a therapeutic product. It is now generally conceded that when in 1890 Koch announced to the world the discovery of tuberculin as a means of curing tuberculosis, he did it against his better judgment, for he felt that he had not experimented with it long enough. The year 1890 was indeed an unhappy one in Koch's brilliant career. The powerful product used in far too large doses, by inexperienced men, indiscriminately in early and late cases, was followed by disastrous results. But time has justified Koch's original claim, and to-day his tuberculin in the hands of careful clinicians has certainly proved to be, in certain cases of tuberculosis, a valuable therapeutic adjuvant.



Koch did not limit his researches to the bacteriologic causes of tuberculosis or to the discovery of tuberculin, and it may be a surprise to many to learn what a deep interest he took in the sociologic aspect of tuberculosis. He studied all sides of the question — municipal control, popular education, the housing problem, etc. More than once did he express to me personally his approval of Professor Biggs' work in New York relating to the municipal control of tuberculosis, and he also referred to it in his celebrated London address in 1901. In regard to this communication made before the British Congress, justice requires us to say that Koch's conclusions as to the rarity of the transmission of bovine tuberculosis to human beings were too sweeping, this having been borne out by subsequent investigations. But had it not been for Koch's London address, much scientific work which has now cleared up the controversy would not have been done.

Koch's last contribution to the *Zeitschrift für Hygiene und Infektionskrankheiten* showed his deep interest in the sociologic aspect of tuberculosis. The article was entitled "The Epidemiology of Tuberculosis." In it he very justly ascribes the still very great prevalence of tuberculosis in certain sections of Europe to the unfortunate housing conditions and particularly to the overcrowded sleeping quarters of the masses. He also came to the conclusion that, where institutional care had been most readily available, the morbidity and mortality fron tuberculosis has been reduced to the greatest extent and *vice versa.*

Koch believed in popular education, and I hav received many a kindly word from him to encourage m in my humble labors in that direction. In his last lette to me, a few months before his death, he wrote:

> Popular works on tuberculosis are destined to play an important part in the enlightenment of the people, and the American people seem to be particularly susceptible to such education.

I hope we may deserve this gracious compliment paid to the American people by the great Koch.

And now, in conclusion, a few words on the personal side of this great man. On the evening of April 11, 1908, Koch was the guest of the German Medical Society of New York. It was indeed a distinguished gathering. Professor Karl Beck, as the president of the society, was the toastmaster of the evening. Your own distinguished teacher, Professor Welch, being one of Koch's first pupils, welcomed the great scientist to our shores, and spoke in eloquent words of the achievements of his master. Equal praises were bestowed on Koch by the Nestor of the New York and the entire American medical profession, Prof. Abraham Jacobi. Andrew Carnegie, the philanthropist, who had given 500,000 marks for the Koch Institute in Berlin, praised Koch as a hero of civilization and peace, far greater than a hero in war, and concluded by saying:

> Every age has its ideals, and the servants and saviors of mankind are our present-day ideals, for I firmly believe that service to mankind is the highest service to God.

And what did the great Koch reply to all this praise and eulogy? His answer was of so inspiring and modest a character that I believe it to be worth while to reproduce it in the original words which will be found below. I will also translate it into English as exactly as possible:

> When I now consider the honor you have conferred upon me here this evening, when I consider all that has been said and done in my praise, there arises in my mind a doubt as to whether I am really entitled to such distinction. Some of the kind things which have been said of me I believe I may accept with a clear conscience, but I have done nothing else than what you are doing every day. I have worked as hard as I could and have fulfilled my duty and obligations. If the success really

was greater than is usually the case, the reason for it is to be found in the fact that in my wanderings through the medical field I came on regions where gold was still lying by the wayside. Fortune is necessary to be able to distinguish gold from the base metals, but that is no great merit. I am glad to see Mr. Carnegie here, whose generous gift to the Koch Foundation in Berlin made everywhere such a deep impression. I would wish to thank Mr. Carnegie with all my heart. The foundation which is to bear my name is, I hope, destined to show great results in the field of tuberculosis research. While special hospitals and sanatoriums for the treatment of tuberculosis are of local importance in the combat against tuberculosis, the Koch Institute or Foundation is destined to study the underlying causes and as yet unsolved problems of the disease and thus will benefit mankind at large.[2]

Koch had a remarkable genius for research work, yet his aim was always eminently practical and his sympathies genuine and real. By hard work and diligent application he revealed the hidden mysteries of disease.

Koch was not privileged to see the foundation for further tuberculosis research work, bearing his name, completed. He died May 27, surrounded by devoted pupils and friends. By indubitable right he now takes his place with the immortals and his name will be handed down through generations to come as one who has lived and labored for the good of mankind.

In accordance with Koch's last request, his funeral was of the simplest kind, and as an enthusiastic sanitarian he had directed his body to be cremated. His admirers and pupils gathered the ashes of the beloved master and enshrined them in a mausoleum located in the Institut für Infektionskrankheiten in Berlin, of which Koch had been director for many years.

I venture to say that for generations to come, all physicians, and likewise the many men and women outside of the profession who are interested in scientific or preventive medicine will, on visiting Berlin, deem it a pious duty to make a pilgrimage to this last resting-place of the ashes of Robert Koch.

A CLINICAL STUDY OF SPOROTRICHOSIS

WITH A REPORT OF FOUR CASES

J. M. SUTTON, M.D.

HALSTEAD, KAN.

During the past few months several articles dealing with sporotrichosis in man have appeared in the American literature.[1] Evidently the disease is not so rare as was supposed. Practically all these cases have been seen in farmers and stockmen. The disease seems fairly prevalent in rural districts, and if it is to be successfully treated the nature of the infection must be recognized.

It is possible that cases of sporotrichosis have been diagnosed as tuberculous lymphangitis.[2] Unfortunately, the infection is usually treated surgically and the patient undergoes weeks or months of needless suffering.

As previous writers have pointed out, a traumatic lesion of the arm, hand or forearm which proves resistant to ordinary surgical treatment and is accompanied by the development of one or more sharply defined, painless, cutaneous or subcutaneous abscesses along the course of the lymphatics should always arouse suspicion, especially if the inflammatory manifestations of a coccic infection are absent.

It is well to remember (as occurred in one of the following cases) a concurrent infection of the ordinary pus germs may develop as a result of repeated surgi procedure and thus mask the typical symptoms of primary trouble.

The organism consists of a branching, septate, coa mycelium, from which ovoid bodies develop by buddi either from lateral or terminal filaments or from sides of the threads. These ovoid bodies are spores (F 3, Case 1).

Lutz and Splendorie[3] report the presence of t fungus in the mucous membrane of the mouth of healt rats; they ascribe the occurrence of cutaneous spo trichosis of rats to infection from bites. Rather ext sive experiments have shown rats and mice to be m susceptible; cats, dogs and rabbits negative; guinea-p susceptible, but less so than rats and mice. Intrape toneal injection in guinea-pigs failed to produce the case, while in the case of rats the organism was recov from the circulating blood as well as from diff tissues of the body. They found the growth to be scanty and slow, forty-eight to seventy-two hours ing before a few colonies were seen. They cul the fungi on all ordinary media both acid and all in reaction. The optimum temperature was found 28 C., though a much slower growth still occurr C. Growth was not inhibited by the addition cent. tartaric acid and this substance was obtain a pure culture. The addition of grape the media produced a more luxuriant growth. his late work, notes the fact that Norris a found difficulty in growing the streptothrix tried fresh sterile kidney tissue of rabbits.

Trimble and Shaw report a case of sporot tion and mention the fact that when cult ficially the surface of the growth becom turning brown to black with age.

In all of the following cases, which ca observation during the past year, diagno by microscopic examination:

CASE 1.—H. G. J., laborer, aged 52, m personal history good, had never suffere physical examination was otherwise neg previous to consultation, while tearing patient received a puncture wound in from a small nail which penetrated d little trouble and was not regarded prompt. Three weeks later a nodule hand opposite site of puncture. Th diameter, 0.5 cm. elevated, slightly and sharply circumscribed; dark r fluctuation was evident. No inflan tissue was present and no areola the following week successive r (Figs. 1 and 2), twenty-four in nun

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[2] "Wenn ich alles zusammenfasse, was hier zu meinem Lobe gethan und gesagt worden ist, und die grosse Auszeichnung, die Sie mir zu Theil werden liesser nn entstent in mir ein Bedenken, ob ich auch , mich so feiern zu lassen. Manches von dem nachgesagt wird, kann ich, wie ich glaube, mit gutem Gewissen akzeptieren. Aber ich habe nichts anderes gethan, als was Sie jeden Tag thun, nämlich ich habe gearbeitet was ich konnte, und meine Pflicht und Schuldigkeit gethan. Wenn etwas mehr dabei herausgekommen ist, so liegt das daran, dass ich auf meinen Wanderungen durch das medizinische Gebiet auf Strecken stiess, wo das Gold noch auf dem Wege lag. Es gehört allerdings Glück dazu, das Gold von dem Unedlen scheiden zu können; das ist aber kein besonderes Verdienst. Es freut mich besonders Herrn Carnegie hier zu sehen, dessen hochherzige Spende zur lben einen tiefen Eindruck gemacht hat. Ich meinen bescheidenen aber herzlichen und war Die meinen Namen tragende Stiftung ist grosse Resultate auf dem Gebiete der Erforschung der Tuberkulose zu zeitigen. Während nken-häusern und Sanatorien in der von lokaler Bedeutung sind, soll die , in das Wesen der Krankheit tief einzudringen, um so Vortheile zu schaffen, die der ganzen Menschheit zu Gute kommen."

[1] Sutton: THE JOURNAL A. M. A., Sept. 17, 1910, p. 1000; Dec. 24, 1910, p. 2213; Hyde and Davis: Jour. Cutan. Dis., 1910, 321; Pusey: Ibid., 352; Stelwagon: Diseases of Skin, 1910,

[2] Quain: Tubercular Lymphangitis, 1904.

[3] Lutz and Splendorie: Centralbl.

CAUSES AND PREVENTION OF DEATHS DUE TO ANESTHESIA

Deaths from anesthetics are said to be on the increase both in this country and abroad. The fact cannot be gainsaid that chloroform occasionally proves fatal in the hands of the most careful and expert anesthetists. A fruitful source of deaths is the administration of anesthetics by untrained administrators and by those who have had a fair training, but are careless, poor observers, or are overconfident in the safety of the drug they are using. At present we have no absolutely safe anesthetic, and as this is an age of activity along research lines new anesthetic agents or combinations are suggested and tried. Questionable methods of producing anesthesia are responsible for a large number of deaths. Then, too, surgeons are frequently at fault in insisting on a deeper narcosis than is safe, particularly when an inexperienced individual is acting as anesthetist.

The remedy for these evils must be education. Both didactic and practical instruction in the use of anesthetics should be made an obligatory part of the medical curriculum. The didactic instruction should consist of a description of the various drugs used for anesthesia, their action, and methods of administration, preparation of the patient, selection of the anesthetic, after effects and their treatment and how to avoid and deal with anesthetic accidents. The practical instruction should consist in the administration of anesthetics under competent guidance.

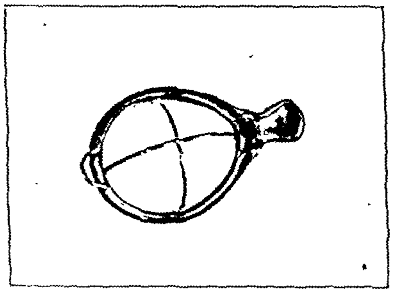


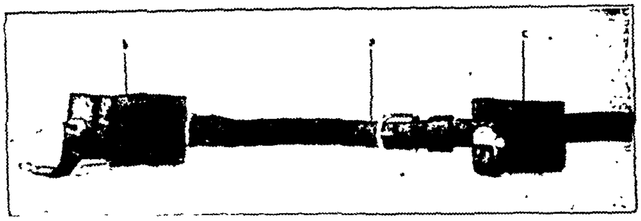
Fig. 1.—Schimmelbusch anesthesia mask.

Every hospital in which operations are performed should have on its staff a paid anesthetist, who should be given complete charge of the administration of anesthetics. It should be his duty to visit operating-rooms during operations and instruct, make suggestions to or correct interns in their anesthetic work, and see that they do not perpetuate the evil practices handed down by their predecessors. He should administer all anesthetics requiring special skill. In the latter instance he should receive extra remuneration from all except charity patients.

Unfortunately most anesthetists receive their meager instruction from surgeons, during the operations, and it is a notorious fact that the majority of surgeons are poor anesthetists. From the fact that a man operates hundreds of times a year it does not follow that he is proficient in the art of producing and maintaining anesthesia any more than from the fact that a professional anesthetist glances occasionally at the field of operation it follows that he should become proficient in the art of surgery.

COMPARATIVE SAFETY OF CHLOROFORM AND ETHER

Unprejudiced investigations have placed the comparative safety of chloroform and ether on a firmer basis and it is now quite generally conceded that the limitations of chloroform have been markedly increased while those of ether have been decreased. Clinical results and careful research work conclusively show, not only that death during chloroform administration is much more frequent than when ether is used, but that evil after-effects are quite as common and much more serious. Experimentally it has been found that about 70 per cent. of animals anesthetized with chloroform show liver changes varying from fatty degeneration to necrosis. The degree of destruction seems to bear some relationship to the length of the narcosis, and especially to repeated anesthetizations. The changes usually begin in the center of the lobule and may extend till all the liver cells become more or less affected.



'Fig. 2.—Restraint straps for use in anesthesia: a, central strap showing adjustment buckle; b, cuff opened showing clasp fastener; c, cuff closed.

In the human subject the symptoms of late poisoning develop two or three days after the narcosis, in patients who have shown no evil effect from the operative procedures. Death occurs in four or five days. Autopsy reveals small hemorrhagic foci in the gastro-intestinal tract, mesentery, omentum, pleura, pericardium. Kidney epithelium is swollen, contains fat droplets or is necrotic, no inflammatory changes being present. The most marked change, however, is found in the liver. The lobules are decreased in size, the parenchyma cells may be completely destroyed through fatty degeneration or necrosis, but no evidence of acute or chronic inflammation or change in the bile-ducts is present. Persons in good general physical condition are quite as apt to succumb to the poisonous effects of chloroform as the debilitated. The majority of reported deaths occurred before middle life. As the question of safety is of paramount importance and should dominate all others in the selection of an anesthetic, no one is justified in using chloroform except for definite reasons, or under peculiar circumstances. It should be remembered that the more chronic a lesion is the less important it is as a contraindication to the use of ether.

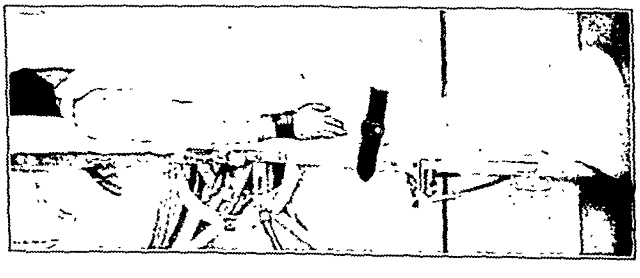


Fig. 3.—Patient in position for operation with restraint straps adjusted, including a simple canvas surcingle about the knees.

NURSES AS ANESTHETISTS

Nurses when properly trained make very good anesthetizers and frequently their technic becomes quite perfect. But they work at very great disadvantage. Because of their lack of medical training, they are unable to weigh physical findings, and not being familiar with operative procedures, they are unable to decide which anesthetic is the safest in a particular case, or which will produce for the surgeon the best operative conditions. Consequently the question resolves itself into one anesthetic in all classes of cases and no hope of advancement or research work can be expected.

It may be urged that surgeons prefer selecting the anesthetic, which is generally true because there are so few anesthetists capable of taking the full responsibility of the anesthetic end, as the surgeon does the surgical end. This is not the case where medically qualified professional anesthetists are employed who are never slave to any one anesthetic, but select in a logical manner the agent best suited to the case in hand.

SHALL THE ANESTHETIZER OBSERVE THE OPERATION?

It has been stated that the anesthetizer should never look at the operative field, but should keep his eye riveted on the patient's face. This is a serious mistake, for unless one keeps in touch with the operator, he cannot interpret changes in the circulation and respiration which are directly due to operative procedures. Neither can he tell the degree of narcosis indicated for the operation in hand throughout, or at different periods, and the patients are kept either too profoundly asleep or move or show some sign of too light an anesthesia at a most inopportune moment. I do not mean that every step of the operation should be watched, but an occasional glance at the operative field will keep one posted.

REFLEXES AND INHIBITIONS

Reflexes and respiratory inhibitions are of great importance and should be understood by operators and anesthetists. The region supplied by the superior laryngeal nerve appears to be especially endowed with inhibitory impulses, as is frequently demonstrated in operations about the larynx and pharynx. Swabbing out the throat during anesthesia is occasionally followed by a suspension of respiration. This inhibition, it is true, usually passes off quickly, but it causes consternation, and artificial respiration, with all its attendant commotion, may be instituted before the patient is again breathing in a regular manner. If the patient's head is turned to the side, any mucus which could be reached with a swab will flow out at the angle of the mouth. Modified respiration, due to peripheral impulses, is well demonstrated in exploratory laparotomies, as the examining hand passes from one region to another. Increased, but noiseless, respiration is immediately produced on contact with the peritoneum. Manipulation about the diaphragm causes noisy expiration, while manipulation about the pelvis, sigmoid, rectum and anus causes a prolonged inspiration. Perhaps no reflex action causes the impatient surgeon so much annoyance as the almost explosive expiration caused by manipulations of the intestine, in an effort to replace it in the abdominal cavity. Surgeons usually attribute the difficulty to imperfect narcosis, but if they will cease manipulations for a few moments until the reflex action disappears, they will experience no trouble in returning the bowel through the incision.

OPEN METHOD OF ETHERIZATION

In 1898, I reported to this society a new method of etherization which I had employed in a thousand administrations while in the service of Dr. A. J. Ochsner. Four or five years preceding my observations, Dr. Lawrence H. Prince, the originator of the method, had used it in two series of cases of 500 each. In his published articles may be found a description of the technic employed. The superiority of the method is evidenced by its steady growth in popularity, not only in this country, but also abroad. I have used this "open" method of etherization, as Dr. Prince suggested, with one or two unimportant modifications in over 15,000 anesthetizations. I feel, as I did at the end of my first trial thousand, that when properly used it is in all respects ideal. At the time Dr. Prince demonstrated the possibility of giving ether similarly to chloroform, the only mask on the market was the Esmarch. At present there are so many styles that it is difficult for an inexperienced anesthetizer to select one. I prefer the Schimmelbusch (Fig. 1). The weight is about right to make it easily kept on the face, the shape is good and it is sufficiently large to cover the mouth and nose without being cumbersome or complicated, as is, for instance, the mask suggested by Ferguson. Having no handle or nose-piece it can be used with the patient in any position on the table, or for any operation about the nose or face, except mouth or jaw operations.

I cover the mask with two layers of stockinet—medium quality—and this is all that should be used or is necessary except in cases of alcoholics. With the latter class of patients, it is usually necessary to place three or four layers of gauze over the stockinet, which should be removed as soon as the individual passes the stage of excitement. Placing ten, fifteen or twenty layers of gauze over the stockinet is not only unnecessary, but it approaches the old "closed" method, except that the ether is dropped on the outside to evaporate, while the patient reinhales his own breath from within, instead of the ether being poured inside of the cone and the patient allowed to breathe it and his carbon dioxid as was the case with the old method of etherization. Dr. Prince advocated allowing as much air with the ether as was consistent with anesthetization, thereby reducing the immediate and after ill effects of the drug. It goes without saying that the more gauze one has over the mask the less air the patient receives and the more carbon dioxid he inhales.

RESTRAINT STRAPS

I desire to call your attention to a very humane and simple, but efficient, device used in insane asylums for restraining patients. We have found it an almost invaluable addition to our anesthetic armamentarium. The strap consists of a central piece of leather provided with a buckle, which allows the strap to be adjusted to the width of the individual's hip. At either end of the strap are attached cuffs with clasp fasteners. The cuff, like the central strap, can be adjusted to fit different sized wrists. The patient lies on the central strap with the hands placed at his sides, with the cuffs about his wrists. This is a comfortable position for the patient: the hands are out of the way of the operator; and it is impossible for them to fall off the table causing a possible pressure-paralysis. It is also impossible during the stage of excitement for the patient to use his hands. Furthermore, if a change of position for operative purposes, or if artificial respiration, should become necessary, the hands can be loosened almost instantaneously.

In addition to this strap we use an ordinary surcingle. This should be placed rather snugly just above the knees. If placed below the knees the patient will be able to work the limbs from under it. With these two restraint straps one person can manage the worst alcoholic during the stage of excitement with absolutely no danger of his getting off the table.

DRUGGING BEFORE GENERAL ANESTHESIA

I wish to protest against the routine giving of drugs before ether and chloroform anesthesia. In selected cases it may be of advantage, but the system can eliminate one poison much more easily than it can three or four at the same time. The use of morphin with atropin or with hyoscin (scopolamin) in combination with ether or chloroform is absolutely detrimental in many instances. It is a well-known therapeutic fact that one drug may augment the action of another, and this is especially so in an ether or chloroform-morphin combination. Consequently, an overdose is more easily administered. The excessive action may be undesirable or dangerous. A number of instances have been reported, in which alarming respiratory depressions, or even deaths have been attributed to this method. In cases of any untoward accident, there is not only the volatile and quickly removable drug, but also the non-volatile and comparatively permanent one to be eliminated. Many former advocates have abandoned the method because of deaths reported by competent anesthetizers, which were due to the more permanent drug, although small doses were given.

Not the least of the objectionable features of drugging before general anesthesia is the masking of the most valuable of all guides in anesthesia, namely, the pupillary reaction. With a single drug, as ether, or chloroform, one can interpret every change in respiration and circulation, meet and combat it; not so when several drugs are acting and one has no way of knowing which is the guilty one. Because less chloroform or ether is required when combined with morphin and atropin or scopolamin, the combination has been recommended in mouth operations, but that advantage is more than offset by the disadvantages of the patient's remaining asleep after the operation is completed. Morphin allays the reflex excitability of the air passages, thus retarding coughing and favoring the retention of aspirated blood or vomitus in the trachea or bronchi, which predisposes to pneumonia. Many people are unable to take morphin without distress or vomiting, and in such individuals the disagreeable after-effects of ether or chloroform would be aggravated. If the lovers of atropin will keep the patient's head turned to the side, troublesome mucus will escape at the angle of the mouth or remain in the cheek where it can be wiped out. This position also prevents the tongue from falling back and obstructing respiration. Occasionally, mucus collects in the bronchi, in which case the patient should be allowed to awaken sufficiently to cough. Mucus acts as a foreign substance and causes reflex coughing, although the patient may still be fairly well anesthetized. They very quickly become narcotized again. The much-lauded quieting effect of combination anesthesia, making the patient come to the operating-room in a tranquil frame of mind, is of little moment compared with the disadvantages of the method. The practice is a reversion to the old time "shot-gun prescription," and should be placed on the shelf with the "tried and found wanting." Occasionally at the end of long, difficult operations on debilitated patients, a stimulant may be indicated. Strychnin has given me the best satisfaction of any drug. It acts in an ideal manner on respiration and circulation in a remarkably short time. However, most patients respond nicely to warm saline solutions given per rectum, especially if there has been much hemorrhage. This has the added advantage of supplying fluid, thereby relieving thirst.

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FAMILY PERNICIOUS ANEMIA

THREE FATAL CASES OF PRIMARY ANEMIA (TWO BROTHERS AND ONE SISTER) AND TWO OF SECONDARY ANEMIA (TWO SISTERS) IN MEMBERS OF ONE FAMILY; FATAL PRIMARY ANEMIA IN A PATERNAL COUSIN; A FIFTH CASE OF FATAL PRIMARY ANEMIA IN A PATERNAL UNCLE.

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The title of this paper well defines an interesting series of cases that have come under my personal observation. I have nothing to add to the existing theories of the causation of true pernicious anemia. That the immediate active factor is some hemolysin, is probably uncontradicted, but the mystery of the ultimate cause is still unsolved. William Hunter has emphasized the important rôle played by septic conditions of the mouth and tongue. Grawitz records four cases based on his view of the intestinal origin of the disease. It is further stated (Edwards) that such conditions as "pregnancy and the puerperium, syphilis, poor hygiene, infectious diseases—as typhoid and malaria"—are causative. But the astonishing and absolute increase in the incidence of the disease would seem to warrant a belief that these must be considered rather as bearing an associated than an etiologic relation to primary anemia. On the other hand, intestinal parasitism may with justice be viewed as the only known demonstrable cause. Unfortunately, even this series, here reported, of five cases in one family, permits of no deductions as to etiology.

Pernicious anemia is no longer to be considered of infrequent occurrence, and, unless a particular instance of the disease present unusual features, its detailed history would hardly be warranted. The noteworthy feature of the report here given is that—as far as I can ascertain—medical annals contain no similar observation. A careful search has revealed but a single instance bearing on heredity in pernicious anemia; this statement[1] quotes "an observation of Klein's, who saw a brother and sister succumb to progressive pernicious anemia." Another published report by Sinkler and Eschner[2] of "three cases of pernicious anemia in one family," may be disregarded because no evidence is adduced warranting their deductions; in fact, but one case of genuine pernicious anemia is admissible, and their report has been quite generally discredited as not justifying the claim made. The single previously recorded instance, therefore, of two cases—a brother and sister—in one family, lends added interest to my observation, which, briefly summarized, is as follows:

Three fatal cases of primary anemia (two brothers and one sister) and two of secondary anemia (two sisters) in members of one family; primary anemia in a paternal cousin; a fifth case of fatal primary anemia in a paternal uncle.

Family History.—The mother of the patients here spoken of as Patients 1, 2 and 3 is 78 years old, and is well. Their father died about fifteen years ago, at the age of 52, after an illness of about two years' duration. The cause of his death was variously stated by the family as Bright's disease, liver disease, and "complications." He was not dropsical. The surviving brothers and sisters, after witnessing the gradual development of the fatal anemia in one brother and one sister, have expressed the belief that their father may have died of a similar train of symptoms. This is merely a conjecture on their part and of no value as evidence. A brother of the father of my patients died after the death of my patient (Case 2) of what was recognized as pernicious anemia. (See below, Case 7.)

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[1] Nothnagel's Encyclopedia of Practical Medicine, Volume on Diseases of the Blood, p. 233.

[2] Sinkler and Eschner: Am. Jour. Med. Sc., 1896, p. 287.

The course of this family scourge can best be developed as we follow the histories in brief of the individual members, five brothers and sisters, all of whom have at various times been under my observation, and of two members of collateral branches of the family.

Case 1.—Primary anemia. *Summary.*—Male, aged 35; several remissions during a period of one year; typical blood-findings; lowest red blood-count 650,000, hemoglobin 20 per cent. Died with symptoms of an acute terminal infection—probably endocarditis.

History.—This patient's personal history prior to the fall of 1899 is unimportant. In the summer of 1899 he submitted to an examination for life insurance, and on a very carefully executed test was granted the policy applied for. It is possible that a degree of pallor existed even at this time; but the man was a blond and the pallor may not have been sufficiently striking to warrant a suspicion of its pathologic character. The anemia increased in intensity and was attended with great weakness. He improved markedly in the fall, but suffered a second relapse in December of that year. He was under the care of a competent physician at this time, and the diagnosis "pernicious anemia" was made. I was later informed that during the period of severe illness in this first summer his blood had been reduced to 20 per cent hemoglobin, and 1,500,000 erythrocyte count, but that in the fall the hemoglobin had again mounted to 80 per cent. Feb. 23, 1900, he consulted me. He then complained of feeling very weak, and of having had what he termed an attack of "grip." The history gave evidence of similar previous attacks. This periodic disability consisted of weakness, pain and soreness in the limbs, slight elevation of temperature, and gastric uneasiness.

Examinations.—At this time he looked quite fleshy and his face was round and full, this fleshy but flabby appearance persisting to the end. The skin and the conjunctival and oral mucous surfaces exhibited great pallor. No hemorrhages were noted. Hemoglobin 45 per cent, erythrocytes 1,880,000; color index 1.2. There was no history of malaria or of any other infectious disease, and no evidence of endocarditis or gastric disease. Hemic (?) murmurs were present. The blood picture was at this time quite convincing of an anemia of the pernicious type. Micro-macro-poikilocytes were present to a moderate degree; few nucleated red corpuscles were found. After a lapse of one week I was again consulted. The patient had been having another attack of what he termed "grip": his knees, ankles and wrists were somewhat stiff and lame, though not swollen or tender; his temperature had reached 105 F. the previous day, and was now 103 F. The conjunctivæ were very yellow, the skin of a similar tint. The spleen was enlarged, liver normal in size and not tender, a systolic heart murmur, heard loudest at third left interspace, was present; lungs were normal. A venous hum was very prominent. The urine contained a trace of albumin, but no organic sediment. Three days later the patient developed a cough, and a little frothy, blood-streaked mucus was expectorated. Labial herpes was present. Crepitation was found at right base posteriorly. but no bronchial breathing or dulness; respirations 30 per minute; epistaxis. Blood examined at this time revealed numerous normoblasts and megaloblasts, marked poikilocytosis; erythrocytes 1,175,000; hemoglobin 32 per cent; color-index 1.36. All pulmonary signs and symptoms disappeared in a few days and the temperature dropped to 100 F. The general condition seemed improved, though the blood-picture was disappointing; erythrocytes, 635,000; hemoglobin, 28 per cent; color index, 1.97. Though no white blood-count was made, the smears showed quite conclusively that a leukocytosis existed. Differential count: polymorphonuclears 68, mononuclears (large and small) 27, myelocytes 5. (In pernicious anemia there is usually a reduction in the number of leukocytes, the lymphocytes being relatively increased. The findings in this case are due to the complicating infection.)

Course of Disease.—Under careful medication with arsenic, iron and strychnin the blood picture changed to: erythrocytes. 1,220,000; hemoglobin, 32 per cent; color index, 1.31. There now developed considerable abdominal distention and quite acute epigastric sensitiveness. Peritonitis was suspected. and the suspicion verified the next day when all previous signs had become much accentuated, and abdominal fluid detected. All symptoms became intensified, and death resulted three days later, in a condition of profound asthenia.

Necropsy.—Permission to perform an autopsy was granted, but, to my keen regret, with the provision that it be done as long after embalming as possible, and just before burial, so that the appearance of the deceased be restored to as nearly a perfect condition as the embalmer's art could make it. I found, forty-eight hours after death, that the process had been so skilfully done as to make a proper recognition of conditions as they had existed ante mortem quite impossible. Pulmonary adhesions were found at the right apex anteriorly; no signs of consolidation or infarction. The heart was so filled with formalinized blood, and the valves so brittle and hard and clotty, that their examination led to no conclusion. The heart muscle was pale. In the abdomen there was serous fluid, and the intestines were covered with a fibrinous exudate; the liver was enlarged and covered with exudate; kidneys large and white; spleen twice normal size; no intestinal ulcers discoverable. The bone-marrow was red and soft and contained numerous multinucleated megaloblasts (gigantoblasts), identical with those found in the circulating blood. All the abdominal organs—including the pancreas—were so matted together and hardened by impregnation with formaldehyd solution that it was impossible to get more than a superficial idea of the pathologic conditions that existed. The exact nature of the intercurrent infection that terminated this case of pernicious anemia can be but conjecturally made, and it is possible only to surmise the diagnosis from the clinical symptoms. The probability of its having been a terminal endocarditis is apparent.

Should it be at all necessary to defend the stand that this was primarily a case of pernicious anemia, and not primarily an infectious endocarditis, I would emphasize these facts: the absence of any heart murmurs in the summer of 1899; the remissions in the disease during the latter half of that year; the patient's general appearance; the blood-findings made by competent observers; my own blood examinations showing a very high color-index; the numerous nucleated red corpuscles, and especially the large number of megaloblasts; the condition of the bone-marrow. The relative increase in polymorphonucleated leukocytes was due to the terminal infection.

Case 2.—Primary anemia. *Summary.*—Mrs. J., aged 45, sister of Patient 1. Three remissions; typical blood-findings; erythrocytes 520,000, hemoglobin 15 per cent.

History.—I first made this patient's acquaintance at her brother's bedside. She was fleshy, of rosy complexion, was feeling and looking well. The only noticeable feature was a slight and fairly constant tremor of the head. I was called professionally in consultation in July, 1902, two years and four months after her brother's death. In the patient's personal history there was nothing noteworthy. For a period of about five months previously she had been in poor health and had complained of considerable weakness. Pallor had existed to a prominent degree, though this had fluctuated in intensity. Two months previously the patient had gained in health, but the improvement was very evanescent, and she soon relapsed into her former state of ill health. She had now been in bed six weeks. There was a daily rise of evening temperature to 100 F. She complained of no pain, but of slight gastric distress and occasional headaches. Sight was good.

Examination.—The face had a pasty appearance, skin pale and yellowish (not icteric), conjunctival and buccal mucous membranes very pale. No petechiæ were noted. There was some puffiness about the eyelids—a probable result of the long-continued use of arsenic. There had been slight edema over the tibiæ, though this did not now exist. Neither the long bones nor the sternum were sensitive to touch. Soft systolic murmurs were heard over all valves, and jugular venous hum was prominent. The spleen was enlarged upward; abdomen otherwise negative; urine pale, sp. gr. 1,008; albumin in small amount, but not more than could be accounted for by the presence of bladder-cells and pus. No casts. *Blood examination:* erythrocytes, 1,500,000; hemoglobin, 40 per cent.; color-index, 1.3: micro-macro- and poikilocytes; few normoblasts. Polymorphonuclears, 80; lymphocytes, 20. A diagnosis of pernicious anemia was made, but only reluctantly concurred in by the physician in charge. The patient herself feared that her condition might be similar to that which had proved fatal in her brother's case.

Course of Disease.—Arsenic was given. I saw the patient again three weeks later, and found her much improved. The blood examination registered a red count of 2,450,000, hemoglobin 65 per cent., color-index 1.2. Her general appearance was better and she was more hopeful. Four months later she was attending to her Christmas purchases, was the picture of perfect health, felt well and strong; her cheeks were so rosy that one might well have doubted the correctness of the diagnosis and the ominous prognosis previously made, were one unmindful of the remissions so characteristic of this disease. In the following February I was again called to see the patient. She was greatly prostrated and the characteristic yellow-hued pallor was prominent. The mucous surfaces were blanched, conjunctivæ icteric, lids puffy. Her stomach was rebellious. She had no pain, her sight was dim, hearing dull, the abdomen sensitive. Venous murmurs were present. The urine was as previously noted. Blood examination showed 520,000 red corpuscles, but it was so watery that the hemoglobin (approximately 15 to 20 per cent.) could not be readily estimated. Irregularity of red corpuscles was very marked; nucleated red cells, normoblasts and megaloblasts (few of the latter) present. Temperature 101 F., pulse weak and of low tension. The stool was examined for possible parasites, but with negative results. All symptoms became more severe, and the patient died in coma one week later. No autopsy.

The existence of these two fatal cases of anemia, considered to have been more than a mere coincidence, roused this family to a state of great apprehension lest other members become similarly attacked. So when about two years later a third sister developed marked pallor, and after four years a fourth also showed unmistakable evidence of anemia, their fears seemed well grounded. In both of these patients, however, evidence favored anemia of the secondary type (associated with melancholia in one, and in the other with menorrhagia), and they are now and have remained in good health.

While the occurrence of the two cases above detailed was not without interest and, because of the unusualness of the facts, may have deserved reporting, I was loath to place them on record at the time because of the suspicious development of secondary anemia in the two other sisters, it being well established that secondary anemia may eventuate in the primary form. I was wholly unprepared, then, for the blow that came from another and wholly unexpected quarter. A brother, the only member of the family with whom I had had a long acquaintance, next fell victim to the disease.

Case 3.—Primary anemia. *Summary.*—Male, aged 42. Aplastic form of pernicious anemia. Blood-findings less severe than in Cases 1 and 2. Spastic-paralytic nervous type (system sclerosis of spinal cord).

Of the three cases this one presents the most interesting (because atypical) form of the disease. Whereas Cases 1 and 2 were quite characteristic in their symptoms, development, course, and blood-findings, of the type in which the disease usually manifests itself, and therefore afforded no diagnostic difficulty, this one presented some problems. The blood-findings of the usual form of pernicious anemia are—within certain limitations—rather characteristic, but the less common and so-called "aplastic" type of the disease offers difficulties of proper classification. The aplastic type, as described by Ehrlich, is characterized by the reduced red blood-count and hemoglobin, but the evidence of cellular regeneration, the nucleated red cells, is absent; in other words, the bone-marrow is aplastic. Therefore, in the absence of the natural reparative process, the rapidly fatal issue of these cases is to be foreseen (80 per cent. of the patients die within three months. Edwards).

History.—In addition to representing the aplastic type, this patient also developed in most marked form the spinal sclerotic nervous symptoms occasionally encountered in pernicious anemia. I had had many years' previous acquaintance with this patient, though no professional relations. He consulted me in March, 1909, complaining of a host of nervous disturbances which he referred to an injury (he was struck on the head and badly beaten by a burglar) sustained one year previously. Syphilis was denied. He had apparently recovered completely from the injuries and their temporary effects, and was well until about November, 1908. At this time he first experienced cramp-like sensations, and numbness and paresthesias in hands, legs, feet and on the abdomen; complained of failing memory and physical weakness, of great fatigue, and of loss of sexual power; no pains in arms and legs. He called attention to his anemic condition. There was much mental depression and loss of ambition.

Examination.—Tactile sense was found normal, but some incoordination of upper and lower extremities was present. Buttoning coat and trousers was accomplished with much difficulty. Knee-jerks were active, ankle-clonus absent, cremaster and abdomen reflexes normal; no Babinski. Gait was of the spastic-paretic type, with ataxic incoordination; the legs were held rather rigid and yet were flung about quite uncontrollably, resembling the reeling of an intoxicated person, and requiring support—at first of a cane, and later that of two persons. Pupils were small and reacted sluggishly to light and accommodation. In general the symptoms resembled a spastic paraplegia, *with marked incoordination*, greatly overshadowing in prominence and intensity the underlying primary anemia itself.[3]

Course of Disease.—I ventured the diagnosis of primary anemia at this time, although this opinion was refused by the family and rejected by another physician. The patient seemed to improve somewhat during the summer; some of his nervous symptoms were less noticeable, others became more pronounced, and the anemia was less prominent. He returned under observation in August with decidedly accentuated nervous disturbances: the mental and physical symptoms had advanced with great rapidity, a fear lest he were syphilitic overcame him, and delusions of persecution became prominent. He saw imaginary foes on mischief intent, lurking on all sides and dogging his footsteps. He became suspicious of food lest it be poisoned, and fought taking drugs for the same reason. Several maniacal outbursts were noted later, and once the nurse described an attack she thought was a convulsion. (This was probably an epileptic seizure.) The incoordination increased and the paresis became paralysis; he became bedridden, refused food, and suffered urinary incontinence and great constipation. The development of bed-sores was unavoidable, and thus, greatly emaciated, and in a condition of asthenia, he died, seven months after having come under my observation.

The blood examination, on his first visit in March, was as follows: red corpuscles, 1,500,000; hemoglobin, 55 per cent.; color-index, 1.7; poikilocytes present but of small degree; no nucleated red cells; heart, lungs and kidneys were normal and remained so throughout the disease. The various erythrocyte counts ranged from 1,500,000 to 3,000,000, the hemoglobin estimate from 45 per cent. to 60 per cent.; color-index always above normal: 1 to 1.7. The pallor of skin and mucous surfaces noted at his first visit became less evident during the early period of general improvement (there was one brief remission with betterment of symptoms and blood-findings), but later were markedly intensified. The peculiar lemon-yellow skin-tint was present, but not of striking intensity.

The blood-findings were characteristic of the aplastic type of the disease: reduction in red cell count and hemoglobin, retention of the high ratio of color to number of cells, and a striking absence of evidence of regeneration. In the many specimens searched, but a small number of nucleated red cells could be found.

It would be idle to speculate on the reason for the apparent staying of the progress of the anemia. The blood-picture, though fluctuating within narrow limits, did not undergo material change after the nervous manifestations became pronounced. This was strikingly illustrated in the repeated examinations made while the patient was bedridden, and during the many weeks of pronounced nervous disturbances, mental and physical. Death was traceable, not so much to the underlying pernicious anemia, as to the adynamia of the pronounced spinal sclerosis that developed in connection with and consequent on the anemia.

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[3] Sclerosis of the posterior and lateral columns has been found in these nervous cases, and three groups are distinguished: (a) those in which the nerve symptoms appear late in the course of a case of obvious pernicious anemia; (b) those in which there are no nerve symptoms (except peripheral paresthesia) during life, but obvious sclerotic changes in the cord post mortem; (c) those in which the cord symptoms precede and overshadow the manifestations of anemia. This most interesting group of cases has been studied especially by James J. Putnam of Boston, Modern Clinical Medicine, p. 313.

The diagnosis of primary pernicious anemia cannot, I believe, be questioned in the three cases cited, and naturally, much alarm is felt lest there be a tendency to the development of the illness in other members of the family. Of the three remaining sisters, one is now, and has been, in perfect health; two have suffered, during the past six years, from recurring attacks of anemia of the secondary type.

Case 4.—Secondary anemia. The patient was first seen in October, 1904, after the death of Patients 1 and 2. She was then 46 years old. She had had numerous attacks of severe anemia, due to menorrhagia and metrorrhagia, but had always "made blood" rapidly. During my early acquaintance (two years) with this patient her pale and corpse-like complexion was very striking. Any severe loss by menstrual flow brought on an intense, bloodless hue. At one time examination showed a red count of 1,200,000, with 25 per cent. hemoglobin, with microscopic characteristics not those of primary anemia. Improvement ensued: red count increased to 3,550,000, hemoglobin to 50 per cent. After 1906 this patient's improvement seemed quite firmly established, and she appeared to enjoy perfect health. A daughter, an only child, had been chlorotic, but was, at the time of this report, in good health.

Case 5.—Secondary anemia. Sister of Patients 1 to 4. The patient consulted me in 1908. She was suffering from melancholia, was pallid, but well nourished. Examination showed a red count of 3,700,000; hemoglobin, 45 per cent.; blood of the secondary anemia type. Her appearance suggested the possibility of less favorable blood-findings. Marked general improvement set in during one month's observation, and she has since remained in perfect health, mental and physical.

Case 6.—Primary anemia. *Summary.*—Mrs. G. C., aged 34. Cousin on paternal side of Patients 1 to 5. Two remissions. Lowest erythrocyte count 300,000. Death due to terminal infection—probably endocarditis.

History.—The father of this patient died of arteriosclerosis at the age of 65; the mother of gastric cancer, aged 50. There are two healthy children, 12 and 5 years of age respectively. This patient was first seen in March, 1910. Until May of the previous year she had always been in good health. At this time she had a severe bronchitis, and with it there existed a mild degree of anemia. She recovered good health and vigor during the following summer, which was spent in the country. She continued well during the winter, but in spring the cough returned, and with it weakness and pallor. Because of the recurring cough she consulted a throat specialist who disregarded entirely the pronounced and rapidly increasing anemia, great weakness and dyspnea, and instituted local treatments for a period of three weeks.

Examination.—On her first visit to me at this time there was no escape from a ready recognition of the seriousness of the illness: her lemon-hued pallor was extreme, the weakness pronounced, and every exertion was attended with dyspnea. She suffered from an irritating cough. At the left base crackling râles were found, without evidence of consolidation. The heart sounds were normal at the apex, and accentuated at the base. Albumin and hyaline casts were present. Abdominal examination was negative. Pupils, reflexes and tactile sensation were normal. A hasty blood examination gave the following result: hemoglobin, 30 per cent.; reds, 1,850,000; marked poikilocytosis; no erythroblasts.

Course of Disease.—One week later jaundice was noted, liver normal, spleen two finger-breadths below costal margin, evening temperature rise to 100 F., pulse 100 to 110. The patient was growing steadily weaker and paler, and suffered from diarrheic stools. A differential leukocyte count made at this time resulted as follows: polynuclears, 63; large mononuclears, 7; small mononuclears, 18; transitionals, 6; eosinophils, 3; myelocytes, 3. A diagnosis of primary pernicious anemia was concurred in by an observer of large experience. All symptoms advanced progressively and quickly, and ten days later the following notation was made: heart dilated, presystolic and systolic murmurs at apex, precordial systolic thrill, liver enlarged and tender, spleen three finger-breadths below costal margin (larger than previously noted); jaundice, stupor and delirium; red corpuscles, 625,000; white, 13,000. Numerous examinations were made during the three weeks' period of observation, the erythrocytes at one time shortly before death recording as low as 300,000, with hemoglobin approximately 20 per cent., though accuracy was hardly possible. Normoblasts were present in small number. poikilocytosis very pronounced. The terminal infection in this patient closely resembled that reported in Case 1.

Case 7.—Brother of father of Patients 1 to 5; also paternal uncle of Patient 6. This patient did not come under my personal observation, but I have every reason to feel satisfied that the diagnosis of pernicious anemia made in his case is substantiated by the facts as related to me by a competent observer. Blood examinations showed conditions characteristic of the disease.

There has thus been sketched a family scourge that, so far as I have been able to ascertain, is unique in the annals of medical literature. It will be noted that all these cases have developed on the paternal side. I have no explanation to offer, can find absolutely no foundation for even speculative conjecture as to the transmissibility of a hemolytic substance. Patients 1, 2, 3 and 6 were married and had individual households; their consorts have remained uninfluenced, and their children, numbering five, are in perfect health. No parasites were found in Cases 2, 3 and 6 (stool of Patient 1 was not examined).

There can be no question that pernicious anemia is on the increase. The disease was considered one of comparative rarity a decade ago, and its greater frequency cannot entirely be due to its more frequent and ready recognition. Possibly the observation I have here made may suggest research in other channels. Certainly there can be no suspicion that coincidence could, by any mere chance, have played a curious prank in the development of these fatal cases of essential anemia.

I would summarize in the following deductions the study of this series of cases:

1. The clinical history and blood-findings permit of no doubt that five of these patients (two brothers and one sister, a paternal cousin, and a paternal uncle) suffered from primary pernicious anemia.
2. The weight of evidence which the two cases of secondary anemia add is not to be wholly ignored, because anemia of the secondary type has frequently been known to be a precursor of the primary form.
3. Hunter's theory, so strongly defended by him, that septic conditions in the mouth—stomatitis, glossitis, etc.—are the etiologic factors in this disease, sheds no light on this series of family anemias. (No such mouth condition existed in any of the cases.)
4. The possibility, as here shown, of its being a family disease, and the knowledge that the disease is on the increase—not only relative, but absolute—suggest an as yet unrecognized source of hemolysis that is showing increased general activity, and is uninfluenced by environment or station.

141 Wisconsin Street.

Excretion of Hexamethylenamin into the Eye.—Experiments show that urotropin (hexamethylenamin) is excreted into the anterior chamber of the eye in about three hours after ingestion, reaches its maximum excretion in about seven hours, and is excreted in great quantities after repeated paracentesis. The excretion of urotropin into the anterior chamber of the eye is remarkably increased by the use of a mydriatic locally. Urotropin in the aqueous humor in the concentration in which it occurs in the anterior chamber does not inhibit the growth of virulent organisms in the test tube.—H. S. Gradle, in *Ophthalmic Record.*

WHAT SHOULD BE THE ATTITUDE OF THE STATE TOWARD THE PRACTICE OF MEDICINE?

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As a result of the efforts of physicians, every state has enacted so-called medical practice acts, the ostensible purpose of which is to protect the people against ignorance and incompetence on the part of those who treat the sick. The majority of these medical practice acts were passed, or, at least revised—some of them more than once—during the past ten years, which is not only an indication of the unusual activity in these matters, but also means that the whole subject is in a very unsettled and unsatisfactory condition.

Before discussing the principle underlying these medical practice acts I wish to state that I firmly believe that they were passed with the sole purpose of protecting the health of the people, and that the thousands of physicians who labored earnestly and honestly for the passage of these bills were actuated only by the purest and most unselfish motives; yet I never could make myself believe that the principle underlying them is right. I believe that, with one or two exceptions, these medical practice acts are fundamentally wrong in principle. I do not mean to convey the idea that they are illegal or unconstitutional; it would be the height of folly for me to express such an opinion in the face of numerous supreme court decisions, including five by the Supreme Court of the United States, that the acts are constitutional. But the mere fact that a law is constitutional is no evidence that it is right.

For a law to be right it must fulfil other demands than those expressed in or denied by constitutions. It must have inherent that which makes for the betterment of the people and this betterment, when possible, should be of a lasting or even progressive nature rather than some apparent or temporary good.

RESTRICTIVE PRINCIPLE

The present medical practice acts are all based on the restrictive principle. The central idea is to restrict the practice of medicine by licensing those who are permitted to engage in it, no person to be given a license who does not possess certain qualifications. Were such an act justly and honestly administered, so that the license to practice carried with it the evidence of the possession by the holder thereof of the high qualifications mentioned, then it would seem that the people would receive that degree of protection against ignorance and incompetence on the part of the physician which it is the intention and purpose of the act to give. But, notwithstanding the fact that the restrictive principle or licensing plan is in operation in practically every state in the Union, the intent of the law—i. e., the protection of the people—has never been realized. The reasons are not difficult to discern.

In the first place, while practically all medical practice acts are based on the restrictive principle, it will be found on reading them that not one holds strictly to the principle. While the profession has been able to convince the people that, for their own protection, it was necessary to license the physician, it could not make the people believe that it was necessary for them to surrender the right to think and the right to seek health by whatsoever route they saw fit, even though that route was thought by some to be unsound and unsafe. As a result we find the statutes of many states encumbered with acts prohibiting the practice of medicine by anyone except a duly qualified and licensed physician and at the same time containing so many exemptions as to rob the acts of all their power for good.

Is it possible to conceive of a more farcical monstrosity in the shape of a medical practice act than that found in the Code of Massachusetts which exempts osteopaths, pharmacists, clairvoyants, persons practicing hypnotism, magnetic healing, mind-cure, massage, Christian science or the cosmopathic method of healing? Such an act provides that the honest, educated physician must possess all kinds of qualifications, which have taken him years to acquire, and then be examined and licensed before he can practice, while any fake, fad, or fraud may be practiced by anybody without restriction. Scientific knowledge and an honest endeavor are dangerous and must be restrained by license!

Twenty-five states, or a little more than one-half, exempt from the provisions of the law some of the following: Medical students practicing under licensed physicians, interns in hospitals, dentists, pharmacists, oculists, chiropodists, midwives, clairvoyants, hypnotists, magnetic healers, masseurs, osteopaths, sellers of patent or proprietary medicines, persons practicing Christian Science, Swedish movement, mind cure, cosmopathic method, any drugless method of healing or any method not using poisonous drugs. Have any of the present-day fads or fakes escaped recognition? Yes, chiropractic and faith-healing, but they are already knocking at the door, as bills exempting them have just been introduced in Nebraska, the District of Columbia, Minnesota, Iowa and Oklahoma, and similar ones undoubtedly will soon be bobbing up all over the country, for those interested in securing such legislation work with a system worthy of a better purpose.

Another reason why the restrictive or licensing plan has failed to accomplish its purpose is found in the interpretation which many judges and courts have given the acts. The point which the courts usually have been called on to decide is whether a certain method of treating the sick constitutes the practice of medicine. It hardly seems possible that a body of educated, intelligent persons accustomed to interpret the meaning of words as applied to the concrete facts of life would confuse a single means to an end with all that is involved in the concept, practice of medicine, yet we frequently find courts defining the practice of medicine to be the giving of drugs, than which there is nothing more absurd or ridiculous, as such a definition is held to mean that a person who is diagnosing and treating the ailments of human beings is not practicing medicine unless he is giving drugs.

An excellent illustration of the inconsistency of courts in their interpretation of what constitutes the practice of medicine is found in the decisions regarding osteopathy. No person who is at all familiar with the facts will deny for a minute that the osteopath is treating human beings afflicted with all kinds of ailments, yet in fifteen states we find that either by statutory enactment or by decision of the courts the osteopath is held to be a practitioner of medicine, while in twenty states, by decision of courts of equal jurisdiction, he is declared not to be a practitioner of medicine. How can we explain such diametrically opposite opinions of so many equally high courts in so many different states in the Union? It is not contended for a moment that any of the eminent jurists composing the several courts which have passed on this question were influenced by anything except their best judgment in the matter, but an analysis of the law and of the decisions in the various states shows this curious psychologic fact. In those states in which the law makes some provision for osteopathy most of the decisions have been that the osteopath is practicing medicine, while almost all of the court decisions to the effect that osteopathy is not the practice of medicine have been in those states which make no provision in the law for osteopathy. As a result, the effect of these contradictory decisions is practically the same, inasmuch as it makes it possible for the osteopath to practice in either case.

Can it be possible that the eminent jurists who have decided in so many states that the osteopath is not practicing medicine, and is therefore exempt from the provisions of the medical practice acts, were influenced in their decisions, consciously or unconsciously, by that higher moral law, which says that no person shall be deprived of the right to think and to act as his mind dictates, provided he do no harm? Let us at least hope that such was the case.

Notwithstanding the constant watchful efforts of the profession, osteopathy has gained recognition by one means or another in a large majority of the states in the Union, as has also Christian Science, "optometry" and many other fads, and we may be sure that any other pathy or ism which has a sufficient following will gain recognition in the same way. It may be that this is but a pessimistic view of the subject, but I am satisfied that anyone who has watched the development of, and the changes which have taken place in, the various medical practice acts, and has seen anything of the manner in which the said acts are enforced, must be convinced that they fail to accomplish that for which they were enacted.

It must be admitted, then, that the restrictive or licensing plan of regulating the practice of medicine is a failure, because there are too many exemptions, because too many isms and pathies have gained recognition, and because there have been too many adverse decisions by judges and courts; hence it does not protect the people against ignorance and incompetence as was the intention.

ANOTHER POINT OF VIEW

Let us now disregard the question of the success or failure of the restrictive plan and consider the subject from an entirely different viewpoint.

If it were possible to enact a law which prohibited any one from practicing medicine who has not been licensed so to do, and which prohibited the licensing of any one who was not shown by an examination that he is qualified, would it be a good plan? I believe not, for I think such a law fundamentally wrong in principle. To say that no person shall treat the sick except those licensed by the state on a qualification basis, is but another way of the state saying to the individual: "You may employ no person or no means to relieve yourself of your sufferings and your afflictions except those designated by the state." Can you see any great difference in principle between this dictum and one of not many years ago to the effect that one must believe certain things and worship in accordance with a definite custom?

Has the state the moral right to deprive the individual of the liberty of thought and action in the one case any more than in the other? I believe that it has not, and therein lies the fundamental defect in the principle underlying the restrictive plan of regulating the practice of medicine. It deprives the individual of the liberty of thought and action to his own detriment, and without compensating good to the state.

By this I do not wish to be understood as saying that there should be no difference in the attitude which the state should assume toward the individual's religious beliefs and toward his care of his health. On the contrary, I think there should be a most marked difference. In the one case we are dealing with a spiritual or an immaterial belief which affects only the individual himself, while in the other we are dealing with the material physical health of the individual, which concerns not only himself, but frequently those who are dependent on him, as well as all those who may come in contact with him.

Furthermore, a large percentage of those who are unable to earn a livelihood by reason of temporary or permanent ill health become a charge either directly or indirectly on the public and, therefore, it is not simply a product of the fancy, but a stern reality, that places the health of the people as the greatest asset of the state and ill health or disease as a positive liability which must be met. These facts then, concerning which much more might be said, place on the state an imperative duty to conserve and safeguard the health of the people. In attempting to carry out this duty we find that the state has enacted certain laws which, on analysis, indicate that the legislators who framed them were either unfamiliar with, or else disregarded, the principles and laws of sociology and psychology, and this too frequently is found to be the case. The attention of legislators is directed to the existence of an evil and pressure is brought to bear on them to correct it. A law is passed which often leads to greater evils than the one which it attempts to correct. As an illustration of this point attention may be directed to some of the medical practice acts already cited.

The evils of quackery, fraud, charlatanism, etc., in the treatment of the sick are called to the attention of the legislators. A law is at once passed to do away with the evil by licensing physicians to practice medicine and prohibiting from practicing all those who are not licensed. This law at the same time gives legal recognition to all forms of quackery and charlatanism, the very evils which it was intended to correct, by specifically exempting them from the provisions of the act.

Take another instance. A state passes a rigid restrictive measure which deprives the individual of the liberty of thought and says to him, "You may employ only a person of a certain class to treat you if you are ill." In other words, the state presumes to do the thinking for the individual, which is not only detrimental to an enlightened and progressive mind, but leads to that state of opposition on the part of the people shown by the inability to convict offenders, even in the fact of established guilt, and thus creates a contempt for the law which is destructive of good government.

In this connection permit me to quote from an editorial in the February, 1911, number of the *California State Journal of Medicine* on the enforcement of the California law:

> "It is almost impossible to obtain a verdict, no matter how conclusive the evidence may be, for practicing without a license if the case is tried in a police court. In San Francisco recently a number of such cases were tried and a verdict of acquittal given when the evidence was absolutely conclusive."

And yet California prides herself on her *medical practice acts*. Such a law also undoubtedly leads some judges so to interpret it as to quite nullify its effect. These are all greater evils from a sociologic standpoint than the ones sought to be corrected.

The law in a matter of this kind should not be dictatorial to the extent of depriving the individual of the right to think for himself, for when the state assumes to do the thinking for the people progress in that direction is at an end. In framing laws of this nature legislators should constantly bear in mind, not only the evils which are to be remedied, but also the fact that the people as a whole are progressively advancing in an evolutionary sense toward higher levels. The law, therefore, when possible, should attempt to aid rather than hinder this progressive evolutionary development of the people.

It is not contended that the laws can all be made to meet the contingencies of future progress without change, but what I claim is that the laws as expressed by the people should be based on the natural laws of evolution as found exemplified in the individual and in society.

THE CORRECT ATTITUDE

With these facts in mind, what then should be the attitude of the state toward the practice of medicine in its broadest sense?

It will be admitted, I think, by all that the preservation of the health of those who are well and the proper care and treatment of those who are ill and afflicted is a work of the utmost importance and one which should be encouraged and fostered in every legitimate way possible. From this standpoint, then, there can be no reason why those who are qualified should be hampered or restricted in the work in any way whatsoever.

Granting that the licensing of physicians is not a revenue measure, the only sound reasons why the state should interfere in the matter are, first, to guard the individual against fraud, ignorance and incompetence on the part of the physician; and second, to protect the people against the sick individual. The first reason, then, is guidance of the people, the second, protection of the people. These two duties, guidance and protection, however, are separate and distinct functions.

It will be granted that all phenomena in Nature follow definite fixed laws and that these laws apply to animate as well as to inanimate matter. This means that the phenomena of life as manifested in health and disease are all the result of natural laws. From this it becomes self-evident that any person who makes a business of treating the sick in any manner whatsoever should have as thorough a knowledge as possible of those laws which govern the living in health and disease.

It is a well-recognized fact that these laws are abstruse and obscure and so numerous that it requires years of close, hard study for one to become familiar with them; and in order that one may keep abreast with the rapid progress of knowledge it is necessary for one to devote his entire time and energies to the subject. This makes it impossible for those engaged in other vocations in life to hope ever to become familiar enough with most of these laws to make use of them without counsel and advice, and, unfortunately, practically every person at one time or another must seek the advice of some one trained and skilled in this branch of knowledge.

These are the facts which place on the state the imperative duty of guiding him who is in search of such advice to one who is qualified to give it. This the state should do through a suitable board of competent men, whose duty it should be to inquire carefully into the qualifications of all those who may properly come before it; and it should have the power to designate in some unmistakable manner those who are found to possess the necessary qualifications. This designation, be it qualified physician, certified physician or what not, should be used by the person receiving it on his card, his sign, in his office or wherever desired, so that all who may wish to consult him may know at a glance that he is a person qualified to treat the sick.

Of course it should be made unlawful under heavy penalty for any person not authorized to do so to apply to himself in any way whatsoever the term of qualification, or any similar term, with the intent to deceive. Furthermore, in order to make it impossible for anyone to err unknowingly in the matter, every other person who attempts to treat or advise the sick or ailing in any manner whatsoever should be compelled to announce on his own card and in his office or place of business, in a conspicuous manner, the fact that he or she is not a qualified physician. In this manner the state fulfils perfectly its duty of guiding the individual, for it makes it impossible for any person who is seeking a qualified advisor on matters of health unknowingly to go astray. By this method it will be seen that all the perplexing questions of isms and pathies are wiped out at once, as it permits anyone to practice in any way one chooses and it likewise permits any person who thinks that his ailments can be relieved only by the prayers of a Christian Scientist or the rubbings of an osteopath or masseur, to act according to the dictates of his conscience.

Were I to stop here it *might be said on first thought* that the method would permit all kinds of quackery and charlatanism to run riot throughout the land; but it will be remembered that the duties of the state in this connection were said to be two, namely, guidance and protection, and protection must supplement guidance. Protection of the people in health matters falls under the general supervision of the department of health and under those laws which govern the individual's responsibility to other individuals and to society as a whole.

None but qualified physicians should be eligible to any medical position in the public health service or in any public or charitable institution under the control of the state or any of its municipalities. As all contagious diseases are a menace to the public and as most of them should be reported to the proper health officers, no unqualified person should be permitted to assume the medical care of such cases.

All parents, guardians and institutions having minors under their care or control should be obliged to furnish them, in case they are sick or injured and require it, with qualified medical attention.

No death certificate should be accepted by the authorities unless signed by a qualified physician, etc. In this manner the state will be able to carry out its duty of protection. It protects the people in general and those individuals in particular who rightly come under its jurisdiction, yet it does not deprive the adult of the right to think and to act for himself so long as he thereby does no harm to others.

In conclusion, permit me to say that I believe the restrictive or licensing plan of regulating the practice of medicine is fundamentally wrong in principle, in that it makes the state dictatorial in a matter of personal rights, which is best left to the thinking individual. It makes conviction of offenders by a jury at times impossible, even in the face of established guilt, because the law is against the conscience of the people. For the same reason, perhaps, it leads judges and courts practically to nullify the law by the interpretations which they give to its provisions. It is evident that the restrictive plan has not the unqualified approval of legislators, otherwise we would not find the law so frequently emasculated by the numerous exemptions found therein.

The law is constantly bombarded by all kinds of pathies, such as osteopathy, optometry, chiropractic, etc., and with increasing success, which shows that the people believe (and justly too) that they have the right to try anything they want to obtain relief from their ailments. On the other hand, the plan but very briefly outlined here is free from all of these objections. It protects the individual in search of a qualified physician by making it impossible for him unknowingly to go astray. It protects the people and all dependents against ignorance and incompetence, so far as it is possible for the law to act; and last, but not least, it is in perfect accord with the evolutionary development of the individual and of society.

100 State Street.

THE SUBSEQUENT HEALTH OF CHILDREN WHO DRANK MILK CONTAINING TUBERCLE BACILLI *

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Three years have passed since I undertook an investigation of the milk sold in New York City, to determine primarily to what extent the ordinary milk sold in cans, which forms the major part of the milk-supply of the city, was contaminated by tubercle bacilli. This study included also an inquiry into the types of these bacilli, whether bovine or human, and a preliminary investigation into the welfare of the children who were so unfortunate as to drink this milk in its raw state. This report was read[1] in 1908, and was afterward published in The Journal.[2] It showed that of the 107 specimens of milk tested on guinea-pigs, 16 per cent. contained virulent tubercle bacilli. Details of the report will be found in the original paper. In order to elucidate what follows, however, it seems necessary to review briefly some of the facts as to the method pursued in the investigation. To obtain the specimens I accompanied the municipal milk inspector on his regular tour, and asked the dealer in each store (they were situated mainly in the tenement-house district) whether he had small children, and whether the children drank the milk in the raw state. Unless he told me that this was the case, I did not take a sample for the test. Of the samples which were found to contain tubercle bacilli, ten were from dealers whose children had been exposed in this way to infection. There were eighteen children in all; nine of these were 2 years of age or under, and one 5 years of age. The preliminary study of the health of these children was not conclusive, and the data are summarized in Table 1. This table shows that the health of the children did not seem to have suffered from their exposure, except possibly in one instance, in which a cervical adenitis had developed. In this case, however, no search for tubercle bacilli was made when the gland was incised, and accordingly the nature of the infection was doubtful. The child was poorly nourished and gave a positive tuberculin reaction, as did several of the other children.

Since 1907-1908, a period of over three years, I have continued to supervise the health of these eighteen children; visiting them in their homes about every three months and watching carefully for the development of any sign of tuberculosis. This has been attended with some difficulty, as the people of the tenements in New York move frequently, and seem by habit to leave no address. Sixteen children, however, have been closely followed, one for two years, and only one was completely lost sight of. I realize that the number of children on whose condition I can report is not large, and that a period of more than three years might be of advantage in judging of the development of tuberculous infection; but I make this report now as I may be unable to follow these cases any longer, and as I believe that the results are of interest from several points of view.

I may add that the only similar report has been a recent one from the Imperial Health Commission of Germany,[3] which investigated the health of 151 children who drank raw milk coming from cows with tuberculosis of the udder. Two of these children between the ages of 1 and 2 years developed cervical gland tuberculosis, from which a bovine type of bacillus was cultivated. Some other children showed signs suspicious of tuberculosis. The two tuberculous children drank the infected milk for long periods, but, except for the glandular infection, were in good health one and one-half and two years later, respectively.

This report is open to one criticism, which cannot be made in regard to the investigation which I report. Tubercle bacilli were not demonstrated in the milk. A clinical diagnosis of tuberculosis of the udder of the cow was considered the equivalent of finding tubercle bacilli in the milk. Now although this is generally the case, nevertheless it has been found that the milk from cows with tuberculosis of the udder does not at all times contain tubercle bacilli; and, in the second place, udder tuberculosis is frequently confounded with non-specific infections. It is therefore quite possible that some of these children did not drink milk containing tubercle bacilli.

Of the seventeen cases which I have followed, in only one has tuberculosis developed. The other children present the picture of the average tenement-house child, most of them poorly nourished, undeveloped, but free from any active tuberculosis. Four have passed through an attack of measles, one has had scarlet fever, two have suffered from pneumonia without inducing tuberculosis. The child who did develop tuberculosis was 2 years of age when she was given the milk containing tubercle bacilli. This milk was of very poor quality, for milk from the same source was repeatedly found by me to contain virulent tubercle bacilli. In Table 1 this child is described as being poorly nourished, having had cervical adenitis 4 months previously, showing a positive von Pirquet reaction, but with a family history negative as regards tuberculosis. I was out of the city when the cervical adenitis developed and the gland was incised, and accordingly missed the opportunity of obtaining some of the pus or tissue for bacteriologic study. Last winter, however, a cervical gland enlarged near the site of incision of the former gland, and in due course showed fluctuation and was incised. This time I obtained some of the pus, which showed no tubercle bacilli in smear preparations, even with the aid of the alkalin sodium hypochlorite ("antiformin") method, but produced tuberculosis in both guinea-pigs into which it was

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* From the Research Laboratory, Board of Health, New York City.

[1] Tr. Sixth Internat. Cong. Tuberc., iv, Part 2.

[2] The Incidence of Tubercle Bacilli in New York City Milk, with a Study of Its Effects on a Series of Children, The Journal A. M. A., March 27, 1909, p. 10[illegible]1

[3] Kossel, H.: Deutsch. med. Wchnschr., 1910, No. 8, p. 345.

inoculated. Without going into detail as to the method of isolating and differentiating tubercle bacilli, for such description is no longer necessary, I may state that the strain proved to be typically bovine, as judged by its cultural characteristics and virulence for rabbits.

There is no means of knowing whether this infection was due solely to drinking in tubercle bacilli on this particular day, or whether this child had been exposed similarly on previous days. We may be certain, however, that infection did not result from a subsequent milk exposure, as the parents were warned of the danger, and henceforth boiled the milk for the children. In this connection it should be noted that it is by no means inconsequential whether a definite amount of tubercle bacilli is ingested in one dose or in repeated doses. The chance of infection is less when the bacilli are taken in at one occasion than when approximately the same number is ingested in divided doses. I was able to demonstrate this fact conclusively by a simple experiment on guinea-pigs. It had been ascertained that 2 mg. of a certain bovine culture of tubercle bacilli did not produce tuberculosis in guinea-pigs when given to them suspended in milk. Of ten pigs which had received this amount, none developed tuberculosis. The animals were fed by means of a medicine-dropper, and the suspension was so calculated that each pig received about ten drops of milk. In a second series, ten pigs, weighing between 250 and 350 gm., were now given less than 2 mg. (which may be called the subinfectious dose of this culture), but instead of being fed to them at one time, this amount was divided into ten, twenty, thirty, and thirty-five doses, given on as many days. Two of the pigs died prematurely; the other eight were killed after three months and were examined carefully for tuberculosis (Table 2). From the table it will be seen that several of the animals developed tuberculosis. In other words, a quantity of tubercle bacilli which may be insufficient to cause infection when given at one time, may have this power when given frequently in small amounts. Repeated exposure to infection at short intervals tends to lower an animal's resistance; a law which probably applies to other bacteria besides tubercle bacilli.

TABLE 1.—DATA CONCERNING CHILDREN WHO DRANK MILK CONTAINING TUBERCLE BACILLI

Milk Dealer.	No. of Children.	Age. Years.	Conjunctival Test.	Condition One Year Later.
A	2	1	—	Healthy.
		3	—	Healthy.
B	1	1 1/2	—	Healthy.
C	2	2	—	Poorly nourished.
		4	—	Healthy.
W	3	5/12	0	Healthy.
		2 1/2	—	
		5	+	Poorly nourished. Physical exam. and family history doubtful.
E	1	1/2	—	
B	1	2	+	Poorly nourished. Cervical adenitis incised four months ago. Von Pirquet positive. Family history negative.
G	3	3	—	Healthy.
		5	—	Healthy.
		9	+	Healthy. Family history negative.
B	1	5/6	0	Healthy.
B	2	1 1/2	—	Poorly nourished.
		3 1/2	+	Healthy. Physical exam. and family history negative.
O	2	2	—	Healthy.
		4	—	Healthy.
	18		4	

+ = positive reaction.
— = no reaction.
0 = no test.

TABLE 2.—TABLE OF GUINEA-PIGS FED WITH TUBERCLE BACILLI IN DIVIDED DOSES

Experiment	No. of Feedings	Amount of Culture, mg *		Total Dose, mg.	Result
1	10	0.1	=	1.0	Negative.
2	10	0.1	=	1.0	Negative.
3	25	0.05	=	1.25	Negative.
4	25	0.05	=	1.25	Tb.
5	30	0.05	=	1.50	?
6	30	0.05	=	1.50	Tb.
7	30	0.05	=	1.50	Tb.
8	35	0.05	=	1.75	Tb.

* Ten guinea-pigs, used as a control experiment, received 2 mg. of this culture in one dose, and failed to develop tuberculosis.

This same phenomenon may well have played a part in the infection of the child who developed tuberculous adenitis. The milk which she drank was found to contain tubercle bacilli oftener than any other which I examined, and it is probable that she consumed tubercle bacilli on many occasions, and that the summation of exposures resulted in infection.

From a clinical point of view there are some points in this case worthy of passing mention: The bovine bacilli remained latent in the cervical glands for two years and caused merely a slight enlargement; the tonsils were not markedly hypertrophied, nor were adenoids present; and, finally, the general condition of the child decidedly improved during the course of the past year and the cutaneous tuberculin reaction became much more pronounced.

Without exaggerating the importance of the bovine bacillus in the etiology of tuberculous lesions, I feel that we must acknowledge that its rôle is not insignificant in childhood. The case of milk infection which I report is not of great interest as an isolated instance of infection by this type of bacillus. Since the report of the British Tuberculosis Commission and the more recent report of Park and Krumwiede[4] showing the frequent occurrence of bovine infection among children, it is unnecessary to adduce further evidence as to the incidence of this type of tuberculous infection. It was rather my purpose to show by means of a definite case that, although a group of children can frequently, without apparent harm, drink milk containing tubercle bacilli, nevertheless such milk can be shown at times to incite infection.

I cannot close without some words as to the means of safeguarding the children against infection by the bovine tubercle bacillus. I feel that I can repeat what I wrote in my previous paper: "Milk not coming from tuberculin-tested cows should be pasteurized or brought to a boil." In substance this is the position recently taken by the New York City Board of Health as regards milk for infants. I should like to add to what I said previously that I believe some care should be taken also in regard to butter, which, it is needless to say, is frequently permeated with virulent tubercle bacilli. Butter is fed without concern to almost all children over one year of age. It is a strange anomaly that we should fear the tubercle bacillus in milk, but urge our children to take butter, which has been found so often to harbor the same bacillus. I believe that there is danger in feeding butter to young children, and cannot see why those who demand milk from tuberculin-tested cows do not make the same demand for the butter for the children. It should also be made possible to purchase a certified or a pasteurized butter; that is to say, a safe butter. It is not necessary for me to pursue this subject further. I wish merely to call attention to the matter, at the same time adding that the idea is not quixotic, but has been carried out in Denmark and other countries for many years. The dealers in certified milk frequently have some of their produce left unsold, which, with profit, could be made into small prints of "certified butter."

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[4] Park, William H., and Krumwiede, C.: The Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Human Tuberculosis, Jour. Med. Research, 1910, xxiii, 185.

This subject seems to me to be timely for the consideration of the certified-milk committees which have been so efficient throughout the United States.

SUMMARY

Of eighteen children who drank milk in which tubercle bacilli were demonstrated, all but one remained free from active tuberculosis during a period of supervision of three years; this one developed tuberculosis of the cervical glands, from which a bacillus of the bovine type was cultivated.

From animal experiments we can conclude that the chance of infection through milk depends not only on the number of bacilli ingested, but also on the frequency of exposure to small infections. For a quantity of bacilli which was insufficient to produce tuberculosis in guinea-pigs when given in one dose, suspended in milk, was able to incite tuberculosis when fed in twenty-five to thirty doses on as many days.

Tubercle bacilli in milk are a menace to the health of young children. Tubercle bacilli in butter are likewise a menace; therefore, a safe butter, whether pasteurized or certified, should be provided for their use.

154 West Seventy-Second Street.

THE SURGICAL RELATIONSHIP BETWEEN UTERINE FIBROIDS AND LOSS OF CARDIAC COMPENSATION [*]

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Since Hofmeier, in 1885, first called attention to the presence of heart lesions associated with fibroids there has been some little interest shown, as evidenced by the careful study by a few writers of individual and collected cases and reports thereof. From a careful study of the literature and a thorough analysis of personal cases I am forced to conclude that there is a definite relation between fibromyomata and the associated condition of lost cardiac compensation. The term "lost cardiac compensation" is rather indefinite, and in the beginning I wish to explain my acceptance of the term as meaning, the symptoms resulting from a loss of normal cardiovascular tone; whether this be due to morbid, organic or functional changes matters not a bit, for even in a severe anemia we have present all the signs, both subjective and objective, of lost cardiac compensation, and functional heart lesions do often give rise to just as many distressing symptoms as those found associated with organic changes.

Up to this time all that has been written on this interesting subject gives evidence on one side of the question, namely, that there are often associated with fibromyomata the symptoms of cardiovascular changes. I propose to discuss another side of the question, namely, that the eradication of the uterine fibroids not only benefits the patient locally, but in some cases results in a more or less complete dissipation of the cardiovascular symptoms. A few brief reports of cases will clearly show my meaning.

REPORT OF CASES

Case 1.—*Patient.*—Mrs. S., aged 35, mother of one child 4 years old, suffered with retroversion. I performed a round-ligament suspension operation on her in March, 1907. The uterus at that time was normal in size. Six months later she consulted me for extreme shortness of breath and swelling of the ankles. The uterus at this time was normal in size and position. The dyspnea continued for the next three months and became so distressing that the patient had to stop her work in a cotton factory.

Examination.—Physical examination showed cyanosis of lips and finger-nails, swelling of the ankles, a weak, rapid pulse of the mitral type, a weak apex beat and a distinct murmur over the mitral area. About this time the menstrual periods became prolonged, with excessive flow, and in the next two months became as frequent as every two weeks. None of the usual remedies gave any relief and I concluded that the metrorrhagia was a result of lost cardiac compensation and the coincident passive congestion. As a matter of precaution, I decided to make a pelvic examination and, to my surprise, found two subperitoneal fibroids about the size of walnuts and also a small submucous fibroid. The cardiac symptoms were steadily growing worse and, being unable to lie down, the patient slept propped on pillows or in a chair.

Operation.—The metrorrhagia continued and the demands to stop it became so urgent that an operation was decided on as a choice between two evils. Ether was used and until its powerful stimulating effects began to tell on the heart and vessels the anesthetist had to keep the patient's head and shoulders well elevated on pillows. I hurriedly did a supravaginal hysterectomy, and when the patient was returned to bed her heart action and respiration were so good that I advised placing her flat on her back with no pillow under the shoulders.

Postoperative History.—Recovery from the anesthetic was normal and from that time on the patient had no trouble in retaining the recumbent posture, whereas for two months past she had suffered intensely from dyspnea. The pulse slowed considerably; all the ankle swelling and shortness of breath disappeared completely and at the end of six weeks the patient was able to resume her work. The murmur over the mitral area still persisted, but the symptoms of lost cardiac compensation were completely dissipated and at the time of making this report this patient was doing daily work and was in very good health.

Up to this time I had been totally ignorant of any relation between uterine fibroids and associated cardiovascular symptoms, and it is easy to imagine my astonishment at the results obtained in this case. I then began to study my gynecologic cases with the result that, in the succeeding three years, four more cases of similar type fell into my care. One of the patients was a very intelligent white woman, 43 years old, who had a fibroid the size of a grapefruit, growing symmetrically from the fundus. In this instance there was no hemorrhage, and a rapid, excitable pulse and dyspnea were the only cardiac signs. Removal of the growth resulted in a complete relief of all symptoms.

The next two cases were in colored women, one 40 years old, the other 30, both of whom had no hemorrhages, but there was present a cardiac murmur, rapid feeble pulse and dyspnea, which became distressing on the slightest exertion. These patients found relief of all cardiovascular symptoms in a period of four to six weeks after removal of the fibroids.

My fifth case was the most interesting of all.

Case 5.—*Patient.*—D. T., colored, aged 35, was brought to me by her physician, who said she was suffering from a large ovarian cyst.

Examination.—I found a typical hepatic facies, extreme shortness of breath, which did not permit the patient to assume the recumbent posture for even a few minutes; a very small pulse, beating 130 times per minute; heart-sounds so weak that I could not be sure of the presence of murmurs; limbs swollen to threefold their normal size and an immensely distended abdomen which rested on the patient's thighs. Palpation, percussion and vaginal examination disclosed nothing but fluid and I reluctantly had to discredit the physician's diagnosis of ovarian cyst, and expressed the opinion that the whole condition was one of lost cardiac compensation. The physician then said that he had most assuredly felt some hard tumors in the pelvis about three years back and had not seen the patient since until a few days previously. We then decided to tap the abdominal cavity, and after the slow withdrawal of 14 gallons of ascitic fluid a number of subperitoneal fibroids, all confluent and about the size of small apples, were easily palpable. The patient went into collapse at the finish of the tapping and I thought would surely die, but she managed to pull herself together.

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[*] Chairman's Address before the Section on Gynecology, at the meeting of Tri-State Medical Association at Raleigh, N. C., Feb. 22, 1911

Operation.—I then decided to try to stimulate her heart to better work before attempting an operation, and waited four days, during which time there was considerable reaccumulation of ascitic fluid. This patient had not slept lying flat for three months and at the operation the anesthesia was well established before we were able to place her flat on the operating table. Under ether her pulse picked up tremendously and after a supravaginal hysterectomy she was placed in bed in the recumbent position.

Postoperative History.—Reaction was normal, but during the first three days the patient's head and shoulders were kept in a partially elevated position to facilitate easy respiration. After this time she had no trouble in breathing. Her convalescence was eventful, in that the swelling of the limbs entirely disappeared and though there was a slight reaccumulation of ascitic fluid during the first week, there was a total absence at the end of a month and the patient left the hospital with a comparatively good heart action. A communication from the patient's physician one year later informed me that she still maintained her cardiac compensation.

I do not make any claim to originality in reporting these cases, but the results obtained are facts which I think worthy of recording. Too little attention has been paid to the presence of cardiovascular symptoms associated with fibromyomata, and though the cases reported are few in number yet they furnish sufficient evidence to show a definite relation between fibroids and disturbed heart action, and further, that an ablation of the new growths has a decidedly beneficial effect on the symptoms of lost cardiac compensation.

There is sufficient evidence recorded to prove that there are both functional and organic cardiovascular changes associated with fibromyomata, but very little evidence to prove that these changes are due directly to the new growth. The cases herein recorded would lend support to the latter hypothesis.

PREVIOUS LITERATURE ON THE SUBJECT

Following Hofmeier's exposition, the next article of moment on this subject came from Fenwick[1] in 1888, in which he recorded twenty-two cases of large cystic tumors, each patient showing on post-mortem examination fatty degeneration of the myocardium. Fenwick thought that the cardiovascular symptoms and organic changes were due to obstruction of the circulation. Later data would discredit this theory.

In 1898 Strassman and Lehman[2] reported a series of seventy-one cases of fibromyomata in which 48.8 per cent. of the patients had definite symptoms of cardiovascular disease. The signs were both objective and subjective and the observations in each case were made by a careful internist. These authors record one very important fact, namely, that in many of the cases the fibroids were very small. To this fact I shall refer later. In 1904 Fleck[3] reported 325 cases of uterine fibroids in 34.6 per cent. of which there were heart changes giving definite symptoms. In eleven of these cases post-mortem examination showed fatty degeneration and infiltration, and brown atrophy in seven.

The year 1905 brought forth several excellent articles by Noble, Winter, Baldy and Boldt, the last two authors handling the subject in a very fair and careful manner. Winter[4] reported 266 cases of fibromyomata, in 30 per cent. of which there were murmurs and definite heart symptoms. Dilatation and hypertrophy were found in 6 per cent. and organic valvular disease in 1 per cent. Boldt[5] records seventy-nine cases of uterine fibroids, in thirty-seven of which there were cardiovascular disturbances. Baldy[6] records 366 cases, in which series there were thirteen sudden deaths. These he attributed to the associated cardiac degenerations. The two latter writers review the subject from the standpoint of the gravity of cardiovascular changes associated with fibromyomata and give evidence to establish the fact that the cardiac disturbances are often of so serious a nature as to produce sudden death immediately or some time after operation. Webster[7] reports 210 cases with cardiovascular symptoms in 25 per cent. Since the recognition of my first case in the summer of 1907 I have had a series of fifty-five cases of uterine fibroids, in five of which there were definite signs, both objective and subjective, of cardiovascular disturbances.

With these recorded facts before us, our interest would naturally turn to the cause of them; and it is here that much is still left for the pathologist, internist and surgeon to explain. Winter believes that all the symptoms of lost cardiac compensation are due entirely to anemia and that little degeneration of the myocardium and no permanent heart lesions are present. This anemia he ascribes to the hemorrhage and coincident malnutrition accompanying fibromyomata and supports this theory by saying that hemorrhage occurs in two-thirds of all cases. The relation of anemia, kidney insufficiency and cardiac weakness is well known, but statistics will not support the anemia hypothesis. The bulk of authorities record hemorrhage in about one-third of all cases and in Fleck's series 133 patients had no hemorrhage, yet heart symptoms were present in 34.6 per cent. In the five cases reported by me, hemorrhage was present in only one and it is a well-recognized fact that in carcinoma of the uterus hemorrhage and malnutrition are present in about 90 per cent. of the cases; yet these signs produce no such symptoms as those found associated with fibromyomata. Brasin called attention to this fact as early as 1893.

Strassman and Lehman think that the cardiac symptoms are due to the myocardial and vessel changes. This would hardly hold true except in well-advanced cases, because the cardiac symptoms were more or less completely dissipated in my cases after removal of the fibroids, which would have been most improbable if definite organic lesions were present. Veit believes the cardiac symptoms are reflex through the nervous system, and in 1900 he called attention to the frequency of asthmatic attacks in young women with small tumors and thought this asthma was due to fibroids.

Percepied[8] calls attention to dyspnea of utero-ovarian origin and cites a number of instances which he considers reflex from the genital organs; 40 per cent. of his patients suffering with asthma developed attacks near the menstrual period, and this would lend support to the ovarian theory. From a careful study of Percepied's cases the greater evidence would support an hysterical basis of explanation, rather than that the dyspnea was due to some internal secretion from the ovary. Fenwick's theory of obstruction to the circulation is worthless because Veit, Fleck, Strassman and Lehman, Fehling, Hennig and others report cardiac symptoms associated with small growths, and in my cases only one patient had a growth large enough to produce any circulatory obstruction. On the other hand, Fenwick's cases would point to the ovary.

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[1] Lancet, London, 1888, i, 1015.
[2] Arch. f. Gynäk., 1898, lvi, 503.
[3] Arch. f. Gynäk., 1904, lxxi, 258.
[4] Ztschr. f. Geburtsh. u. Gynäk., 1905, lv, 109.
[5] New York Med. Jour., 1905, lxxxii, 887.
[6] Am. Jour. Obst., 1905, lii, 370.
[7] Am. Med., ix, 401.
[8] Ann. Soc. méd-chir. de Liége, 1910, xlix, 126.

I am disposed to believe that the cardiac symptoms are due to the products of uterine growth on the heart-muscle or heart-ganglia—some internal secretion directly the product of uterine hyperplasia.

This is supported by the following facts:

1. Hemorrhage, as a causative factor, was present in only one of five cases.
2. In Case 1, there is conclusive evidence that the cardiac symptoms developed before there were any signs referable to the uterine growth, this being still small when discovered. Both Veit and Strassman and Lehman cite cases in which cardiac symptoms developed before any signs referable to the pelvis, and this fact alone would discredit the idea of the causative factor being a nervous reflex or organic changes in the heart and vessels; on the other hand, it would lend color to the probable presence of some product of uterine growth acting on the cardiovascular system.
3. Removal of the fibromyomata resulted in a more or less complete relief of all cardiac symptoms; partial relief came too quickly to have resulted from any regeneration of organic changes.

Carl Hennig[9] records two cases of cardiovascular disturbance in which the patients were cured by the removal of associated fibromyomata, and one case in which the patient was relieved after the menopause when the fibroid decreased in size.

Fehling[10] says that in the presence of fibroids, the first symptoms of cardiovascular disturbance should be an indication for operation; and it is interesting to record here a case reported by Carl Wettergreen[11] of Basedow's disease and a submucous myoma beginning at the same time. Removal of the myoma dissipated the exophthalmos and tachycardia.

CONCLUSIONS

1. In a large percentage of cases of uterine fibroids there are present symptoms of cardiovascular disturbance.
2. The size of the growth has no relation to the severity of the cardiac disturbance; symptoms have been apparent while the growth was still small.
3. In some cases of lost cardiac compensation associated with fibromyomata, the symptoms are materially benefited by removal of the growths.
4. In some cases the cardiac disturbances are of so severe a type as to result in sudden death following operation.
5. The first signs of cardiovascular disturbance associated with uterine fibroids should be an indication for immediate operation, and the watchwords in these cases should be: (a) rapid surgical technic; (b) careful hemostasis; (c) as little handling of the viscera as possible, and (d) the greatest caution against overtaxing the heart during postoperative treatment.

300 Freemason Street.

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[9] Ztschr. f. Geburtsh. u. Gynäk., xxix.

[10] Centralbl. f. Gynak., 1904, xi.

[11] Abstr. in Centralbl. f. Gynäk., 1890, p. 180.

AN IMPROVED DIFFERENTIAL ELASTIC TISSUE STAIN

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Three years ago I described[1] a new method for staining elastic tissue that had given me more satisfactory results than any of those usually employed. More extended experience with this method has shown that the best results are to be obtained only when the staining fluid is freshly prepared. Not only is this a source of inconvenience, but it entails considerable expense, owing to the large amount of hematoxylin required. After much experimentation, in which it seemed to me I tried every conceivable modification, including the substitution of almost all the metals for iron, I finally devised, about a year ago, the method here described.

This method has the advantages over the previous one, that the staining fluid is made up from stock solutions, that about one-ninth as much hematoxylin is required, and that when carefully carried out, precipitates may be avoided and differentiation of the sections is not necessary. The latter advantage I have found especially great in staining serial celloidin sections prepared in the manner described by me elsewhere.[2] The staining fluid may also be used in my method for staining myelin sheaths,[1] if double the amount of ferric chlorid solution is added, and the sections are allowed to stain six hours or longer.[3]

A stock solution is prepared as follows:

Hematoxylin crystals (Grübler)	0.15 gm.
Absolute alcohol	25 c.c.
Dissolve by aid of heat, then add 5 per cent. aqueous *solution of ammonium hydrate*	1 drop
Allow to stand five minutes (longer does no harm), then add Lugol's solution (iodin, 2; potassium iodid, 4; water, 100)	22 c.c.

Filter, and allow to stand twenty-four hours (in corked bottle), after which the solution works well for three months. Solutions one year old stain elastic tissue well, but slightly discolor connective tissue.

For use, add to each cubic centimeter required of the above stock solution, one drop of a 7 per cent. stock solution of ferric chlorid in absolute alcohol. Sections are carried from alcohol into the staining fluid, where they remain one to three hours. In the case of Zenker's fixation, sections may be allowed to remain in the fluid over night, but will then certainly require differentiation. The staining receptacle should be covered to prevent evaporation. For celloidin sections, 2 c.c. of the staining fluid are ordinarily sufficient, and a small bottle makes a convenient receptacle.

Wash sections in water a minute or two, examine under the microscope, and if thought desirable, differentiate for a few seconds in a 1 per cent. aqueous solution of ferric chlorid, roughly prepared from the above alcoholic solution.

Wash in water. Counterstain in a 0.2 per cent. solution of water-soluble eosin in 80 per cent. alcohol.

Alcohol, oil, balsam.

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[1] Some New Staining Methods of Wide Applicability, The Journal A. M. A., March 14, 1908, p. 876.

[2] See Note on Technic in paper on Obstruction of the Central Retinal Vein, Archives of Ophthalmology, 1907, xxxvi, 32.

[3] I have recently found that the myelin sheath method is further improved by differentiating the sections for one to two hours in a 10 per cent. aqueous solution of phosphomolybdic acid, instead of in the ferric chlorid solution previously recommended.

y this method elastic tissue is stained black, while ective tissue, fibroglia, myoglia, neuroglia, myelin, fibrin, take the eosin stain. Nuclei take the hema- ylin stain with an intensity depending on the dura- n of the staining. Fixation in Zenker's fluid is pre- red, but other fixatives give good results. Mercurial ecipitates if removable are removed by the staining uid.

To prevent precipitates it is important to avoid the addition of water to the staining fluid. The measuring graduate and the staining receptacle even if dry, should be washed out with a little alcohol previous to use. It is also necessary to have a nice adjustment of the proportion of ferric chlorid. If too little ferric chlorid is added, the elastic tissue will fail to stain: too much produces precipitates and overstaining. It is possible that different samples of hematoxylin may require a slightly different proportion of ferric chlorid, but this may easily be determined by trial. For ordinary purposes, however, none of these precautions is necessary, since precipitates may be readily removed in the differentiating process.

THE PARTHENOGENETIC DEVELOPMENT OF OVA IN THE MAMMALIAN OVARY AND THE ORIGIN OF OVARIAN TERATOMATA AND CHORIO-EPITHELIOMATA *

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Some years ago, I described[1] peculiar structures that are found in the ovaries of guinea-pigs, and expressed the opinion that they originated in ovarian follicles. Soon after I had published my observations, certain considerations suggested to me that these structures owe their origin to parthenogenetically developing ova.

Inasmuch as at that time I had not yet seen early stages of the structures referred to, I was unable to regard this hypothesis as sufficiently well founded to warrant publication. I continued my investigations in this direction, however, and recently I succeeded in finding in two animals the desired early stages. They must be interpreted as embryos developing parthenogenetically within the ovary of the pinea-pig. We see in each case a chorionic vesicle with trophoblast, and plasmodia and syncytia penetrating into the neighboring tissue. There is also a structure present which is probably to be interpreted as the neural tube.

Aberrant blastomeres cannot be seen in the ovaries of guinea-pigs and, inasmuch as the embryonic structures, described in my former communication, are relatively frequent, occurring in approximately 10 per cent. of all guinea-pigs below the age of six months, and, furthermore, inasmuch as they are situated in the cortex of the ovaries at a place where follicles lie normally and are found within follicle-like cavities, they can be derived only from ova developing parthenogenetically. Fertilization through spermatozoa can be excluded, inasmuch as the history of some of these animals is known to us and precludes such an interpretation. It is very probable that the parthenogenetic development sets in soon after ovulation, the altered conditions in the ovaries at that time (variations in blood-pressure, in intrafollicular pressure, changes in oxygen supply) supplying the necessary stimulus. This interpretation agrees well with my former observations[2] concerning the parallelism existing between the first segmentations taking place in ova within the ovary and certain stages of atresia of follicles. At the time of ovulation an almost general degeneration of the Graafian follicles sets in as I have shown[3] recently. It is also of interest to note that frequently the changes described in this communication are multiple, several ova undergoing parthenogenetic development in the same ovary.

It may be concluded, therefore, that in at least 10 per cent. of all guinea-pigs parthenogenetic development of ova within the ovary starts at some period of the life of the animal. The later stages of these developing embryos bear some resemblance to chorio-epitheliomata. During ovulation, these structures are occasionally injured by hemorrhages and they are ultimately invaded and supplanted by the neighboring connective tissue.

These observations demonstrate that chorio-epitheliomata and teratoid tumors that are found in the ovaries are not derived from misplaced blastomeres, as Bonnet and Marchand believed, but that the older view is correct according to which at least the teratoid tumors of the ovary are derived from parthenogenetically developed ova, an opinion which I, also, expressed on previous occasions.

A RARE MANIFESTATION OF EMPYEMA NECESSITATIS *

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A. H., aged 16 months, female, whose family history and past personal history were negative, on Dec. 15, 1910, developed a "cold" which was associated with a stubborn cough, chilliness, and vomiting. On the following day there was added marked dyspnea, anorexia and all the physical signs of a lobar pneumonia involving the entire right side, anteriorly and posteriorly. The temperature was 103 F., the respirations 60 and the pulse 170. December 17, the left lung became similarly involved with the exception of that portion underlying the last three ribs posteriorly. In the early morning of December 18, the child suddenly developed alarming symptoms of collapse, with marked cyanosis, exaggerated dyspnea, rapid running pulse and prostration. The patient was in a moribund condition. Physical examination revealed a marked dilatation of the heart. After several hours of continuous stimulation by mouth, skin and rectum, in which large doses of strychnin, strophanthin, and nitroglycerin were employed, the cardiac condition was restored.

The patient ran a typical course of a very severe type of pneumonia, until on December 29, when an apparently slow lysis was interrupted by a rising of the pulse, respiration and temperature. The respiration reached a maximum of 110, the pulse 180, and the temperature 104.5 F. Physical examination revealed complete flatness over the entire right chest posteriorly, with absence of breath sounds and tactile fremitus. There was marked Skodaic resonance from the fourth to the seventh rib, and from the right sternal margin to the mammary line anteriorly. Exploratory puncture in the seventh interspace, midaxillary line, December 29, brought the expected pus. Microscopic examination of this pus showed the presence chiefly of streptococci, with, also, numerous pneumococci and staphylococci. We were dealing, therefore, with a streptococcic pneumonia. Repeated aspirations demonstrated

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* From the Department of Pathology, The Barnard Free Skin and Cancer Hospital, St. Louis.

[1] Archiv. f. mikros. Anat., lxv, 1905.

[2] Progressive Changes in the Ova in Mammalian Ovaries, Jour. Med. Research, 1901, i.

[3] Jour. Morphology, 1911, xxii, No. 1.

* Reported before the York County Medical Society, Feb. 2, 1911.

the existence of saccular collections of pus. January 2. the patient suddenly developed a most violent attack of coughing, which could in no manner be checked, and which alarmed the attending nurses. At 10 a. m., she "expectorated" about one-half ounce of pus, during one of these coughing spells, and the diagnosis of rupture of the empyema into the bronchi was at once made. Sedatives were administered in many forms and the cough was somewhat checked. The patient was somewhat nauseated. At 11:20, a gush of four ounces of pus from the mouth followed an attack of cough, and at 12:05, one-half pint of pus was forced through the mouth with a similar attack. At 1.10, two more ounces of pus were expectorated. Thus in a space of three hours, about one pint of pus was expectorated. With careful stimulation the patient improved. January 3, with parental consent, the patient was anesthetized by Dr. Treible, with ether, nitrous oxid and oxygen, given conjointly, and one inch of the seventh rib, in the midaxillary line, was resected. After breaking numerous bands of adhesions which divided the pleural cavity into many pockets, over one quart of pus was liberated. Tube drainage was inserted, followed by the injection of bismuth paste (Beck), and the use of gauze drainage. The patient made an uninterrupted recovery, and is now in Florida enjoying good health.

Generally speaking, the term "empyema necessitatis" refers to an empyema in which pus can make a spontaneous escape (Dorland). Some authors limit the term to the condition in which the pus makes its escape through the chest wall. Empyema may rupture into the esophagus; into the bronchi; through the chest wall: through the diaphragm into the peritoneal cavity; into the pericardium, etc. This spontaneous rupture is a very rare manifestation of empyema complicating pneumonia, especially in an empyema of short duration.

Kerley reports one somewhat similar case of rupture into the bronchi, in a well-nourished boy of three years. Holt states that of nineteen cases of empyema in children, reports of which were collected by Schmidt. "in which a spontaneous discharge of pus occurred either externally or through a bronchus, there were seventeen deaths and two recoveries."

Therapeutics

CAFFEIN

Description.—*Caffeina*, genitive *caffeinæ* (methyltheobromin, or trimethylxanthin) is an alkaloid obtained from the dried seeds of coffee (*Caffea arabica*), and from the dried leaves of tea. When it is obtained from the latter source the alkaloid is called *thein*. Caffein, though the most important constituent of coffee, is a feeble basic principle, and occurs not only in *Caffea arabica* and *Thea sinensis* (or *chinensis*), but also is found in other plants as gaurana, theobroma, cola nut. and maté. Coffee, named from Coffee, a province of Nareá, in Africa, grows on a medium sized tree, which is native of Arabia and parts of Africa, but grows in all tropical countries. Coffee was first introduced into Europe in 1554, and into England in 1640.

Tea is a native of Asia, but grows in other warm climates. Green tea leaves are purer than the black, as they are more carefully collected and dried, the black being dried in heaps.

Coffee may be adulterated with various seeds or beans made of clay or kaolin, while tea may be colored artificially.

Caffein was discovered by Runge in coffee in 1820. Thein was discovered by Oudry in tea in 1827. Caffein and thein are identical, and can be obtained from infusions of coffee or tea by chemical reaction. Caffein (trimethylxanthin) can be prepared synthetically from xanthin.

There are various varieties of coffee, the most important of which in the order of their purity are: first, Mocha; second, Java; third, Rio; fourth, Liberian; but all can be injured by too much heat in roasting. Good coffee yields about 1 per cent. of caffein, while maté or Paraguay tea and Chinese tea yield a little more. Cola nuts yield 2 per cent. of caffein, and gaurana 5 per cent. Much of the caffein in the shops is made from the sweepings of tea warehouses, or from tea which is so damaged as to be unfit for a beverage. The volatile oil or empyreumatic oils of coffee have, in hot decoctions, some aromatic action. A cup of coffee may contain a half teaspoonful of such oils.

Caffein occurs as white, long, flexible, silvery-appearing crystals, generally in masses, odorless, not deliquescent, bitter, and soluble in considerable water or alcohol. The dose of caffein is from 0.05 to 0.10 gram (or from 1 to 2½ grains), but it is best used in the form of the citrated caffein.

Local Action.—There is no external action from caffein, though cold strong infusions of tea are mildly sedative to mucous membranes, perhaps due to the gentle astringent action of the tannic acid contained in the tea. Strong solutions of tea or coffee are mildly irritant to the stomach.

Systemic Action.—Caffein as such is rapidly absorbed, having no local action. As a strong decoction of black coffee it may act as a stomachic or bitter tonic, and may, therefore, stimulate the outpour of the gastric juice. Coffee is stimulant to peristalsis by its aromatics, and therefore increases the secretion of the mucous membrane of the intestines and slightly stimulates the bile secretion, hence coffee is a mild laxative. Decoctions of tea if strong, on the other hand, rather retard digestion, and on account of the tannic acid tend to constipate. A cup of good coffee made with half an ounce of ground beans contains from 0.10 to 0.20 gram of caffein and some substances that act as volatile oils. A cup of good tea made with 100 grains of leaves contains about 2 grains of caffein, though bulk for bulk of tea leaves and coffee beans, the tea contains the more caffein. Green tea contains some volatile oils, black tea very little. Both contain about 7 per cent. of tannic acid, which is extracted slowly, hence the viciousness of prolonged steeping. The volatile oil in the after-dinner cup of black coffee is probably a slight stimulant to digestion, while the hot decoction causes a slight carminative action from the volatile oils. Coffee also slightly stimulates the salivary secretion.

Circulatory System.—Caffein causes the heart, in animals, to beat more rapidly by acting either on the heart muscle or on the terminations of the accelerator nerves. This rapidity seems to be due to a shortening of the diastole and the force of the muscular contraction is increased. This acceleration may be due to stimulation of the irritable muscle in the lower parts of the heart. When caffein is administered to man by the stomach, the heart is generally slowed, owing to the action on the inhibitory center in the medulla. A strong action of caffein lessens the strength of the auricular contraction and later of the ventricular, and soon there is a lessening of the amount of dilatation during diastole. As poisoning progresses the diastole grows shorter, and the ventricles and auricles contract irregularly, and as above stated, without complete relaxation. Very large doses cause very irregular cardiac action, and later permanent contraction or rigor as in skeletal muscles. After death the heart may be found in diastole.

The vasomotor centers in the medulla are stimulated by this drug, causing contraction of the arterioles, and this is the principal cause of the rise of blood-pressure, as the output of blood from the more rapidly contracting heart is not much increased. The muscular coat of the walls of the arterioles is also somewhat stimulated to contraction. The blood becomes somewhat depleted of its water by the strong action of caffein on the kidneys, but it gets its supply again from the tissues.

Nervous System.—Here caffein acts not unlike strychnin, but acts more on the brain. The cerebral cortex is stimulated and the mental functions improve, in fact, it is our best cerebral stimulant. Under its action thoughts are rapid, there is wakefulness and the patient is alert; if the dose is too large, there may be rapid reasoning, but with not so accurate judgment as usual. Whenever fatigue or mental inertia are in evidence, caffein is a temporary cure of the condition, but at the expense of the organism. In other words, it calls forth the reserve power.

Under an over-dose there are convulsions and increased reflex irritability, and any irritation may cause contraction of all the muscles.

Coffee and tea increase the rapidity of mental impressions and the development of thought, but the perfecting or carrying out of these intellectual conceptions may be retarded. Large doses of caffein, or a coffee or tea habit will impair mental activity by increasing the general nervous and reflex irritability. Caffein in over-dose often causes headache, and there may be delirium, tremor, and restlessness, though a tolerance is acquired in those accustomed to its use, but there is always in large doses increased nervous irritability. It is a respiratory stimulant by its action on the medullary center.

The senses are all made more acute under the action of caffein, especially the sense of touch. There is a slight increased temperature during the action of caffein, probably from the increased muscular activity, and also due to the increased oxidation caused by caffein. It has a mild aphrodisiac action, probably due to spinal stimulation.

Muscular System.—A small amount of caffein is a muscle restorative and will increase the strength and temporary endurance of muscles, and more work and longer work can be done without fatigue or sleep under the influence of caffein, probably due to peripheral stimulation of the muscles. However, the system will always pay for this sight draft on its reserve energy. A large amount of caffein, however, is a muscle poison, and injected directly into a muscle it causes a peculiar stiffening or rigor. Coffee and tea, or caffein, increase tissue waste, though they call out the reserve muscle and nerve forces, due to nervous stimulation. The urea and the carbon dioxid output are increased. The chief effects of tea and coffee are due to the caffein and to nothing else.

Action on Secretion.—Caffein is an active diuretic, unless too large doses are used, when a vasomotor contraction is caused by over-stimulation and this contraction affects the blood-vessels of the kidney. Theobromin is, therefore, a better diuretic than caffein, as it causes no contraction of the blood-vessels. Caffein causes some increase of the solids of the urine and the nitrogen is increased, but the increase is mostly of the watery part. Sodium chlorid is the most increased, while uric acid is not at all increased. Hence, caffein probably acts on all the secreting parts of the kidneys; rarely, it may cause a mild glycosuria. The blood depleted of its water gets it either from the tissues or from any edema or infusion that may be present, or demands it from the stomach and intestines.

Action of a Therapeutic Dose or the Primary Physiologic Action.—Caffein increases the tone of the blood-vessels, increases the rate of respiration, stimulates the cerebral functions, increases muscular tone and power, diminishes fatigue, increases the excretion of urine, especially the watery part, and hence raises the specific gravity of the blood, which will then get more water where it can find it. It is excreted by the kidneys and appears in the urine partly as trimethylxanthin or caffein, partly as dimethylxanthin and partly monomethylxanthin, or xanthin.

Toxic Symptoms.—These are: rapid heart, cardiac oppression, due to its irregular contractions, irregular pulse; paleness of the face; restlessness, nervousness; increased reflex irritability, insomnia; rarely delirium and convulsions, and a diminished amount of urine due to vasomotor over-stimulation.

Treatment of Poisoning.—As a chemical antidote for whatever caffein may be in the stomach, tannic acid should be administered in solution or in suspension. As a physiologic antidote to spasmodic contraction of the blood-vessels, nitroglycerin should be given hypodermatically. As cerebrospinal sedatives, chloral and bromids may be given, unless the heart is too weak for such treatment, in which case morphin should be administered hypodermatically. Morphin will quiet the nervous system, but will not stop the action of caffein on the heart, hence nitroglycerin should be frequently repeated. Hot foot-baths may dilate the vessels and relieve some of the tension on the heart. Hot fomentations over the kidneys may aid these to more rapidly excrete the drug.

Therapeutic Uses.—The indications met by this drug are: (1) as a circulatory stimulant; (2) as a cerebral stimulant; (3) as a muscle stimulant; (4) as a diuretic; (5) as an antidote in poisoning.

1. Caffein is more than a cardiac stimulant in that it somewhat strengthens the heart and contracts the blood-vessels. As a cardiac stimulant caffein can be used at any time when such a stimulant is indicated. It acts quickly to tide over a period of cardiac depression, but is not so quick in its action in acute collapse as the reflex stimulation of a strong alcoholic preparation or the stimulation of ammonia. It is, however, a strong adjunct to the above and with strychnin makes an active respiratory and cardiac stimulant with no secondary depression. If there is in the cardiac weakness a good deal of nervous excitability and muscle restlessness, other cardiac stimulants and tonics should be chosen. The same is true when there is high vasomotor tension. As a cardiac stimulo-tonic caffein is indicated in prolonged fevers in place of much alcohol, and is good in typhoid fever in the form of a cup of black coffee given once or twice in the morning. It is best to avoid it in the afternoon on account of its tendency to cause wakefulness. As a cardiac stimulant in weakened heart action with poor cerebral circulation and mental sluggishness it is often efficient. Patients with good compensation in valvular disease should avoid the stimulation from much tea or coffee.

2. As a cerebral stimulant perhaps no drug equals caffein, not only in a person unused to its action, but in those accustomed to its use. While there is no intolerable and uncontrollable desire for caffein when it is

stopped by the ordinary coffee and tea drinker, still at the regular hours for tea and coffee stimulation, if it is omitted the majority of people miss greatly its effects. There is, however, such a condition as the caffein habit, and this habit is on the increase, and its seriousness should be explained to the laity. The hard brain workers at irregular hours, as editors, reporters, authors, and students just before examination, increase the number of hours which the brain will work well by frequent cups of coffee, learning that it is the best and most effectual stimulation that they can take, and often leading to no immediate noticeable secondary depression. As the coffee wakes up the brain, so to speak, it also stirs up the spinal cord and nervous and peripheral reflexes. The man after cerebral stimulation then smokes a good deal, which soothes the spinal irritation, and he then, having coffee plus tobacco can do an immense amount of brain work. If this is long kept up, sooner or later, depending on the individual endurance, a nervous, irritable condition supervenes with insomnia, anorexia, loss of weight, a tremulous tongue, with perhaps some trembling of the hands, with pale or yellowish skin due to disturbed liver function, and perhaps some kidney or bladder irritability, and we have a neurasthenic to treat. This means that all coffee and tea must be stopped and the patient given a mental rest, change of air and scene, and the institution of every legitimate means or subterfuge to produce sleep.

The chronic tea drinkers of this country are generally the kitchen girls and women who remain in the kitchen and in the house a great deal. The teapot is constantly on the stove and the strong stale brew full of tannic acid and bitter extractives is poured into the stomach at frequent intervals. Here we get not only the stimulation of the caffein, but the irritation of the tannin derivatives on the stomach mucous membrane, and tannin precipitates the peptones and albumins and soon causes dyspepsia. The sooner or later result is sleeplessness, an irritable fretty disposition, anorexia, nervous dyspepsia, or even gastritis, and constipation. Of course, the treatment is to stop the cause, treat the insomnia, dyspepsia and constipation, and give fresh air. Tea tasters show earlier than other individuals decay of the teeth. The above shows conclusively that children up to fifteen years should not drink coffee or tea regularly, and caffeinated soda fountain drinks should be prohibited.

Therapeutically, caffein as a cerebral stimulant can be used whenever a sudden demand for much brain work is required, as also in some mental morbid conditions, but all such use of caffein is purely tentative and symptomatic. The cause of the mental deterioration should be sought.

Caffein has been used as a substitute for alcohol in breaking off the alcohol habit.

As a respiratory stimulant caffein is indicated in conjunction with ammonia whenever respiration is failing. In headache, due to depression, sometimes in autointoxication from fermentation of the bowels, in some forms of neuralgia, and even rarely in migraine, caffein is efficient in changing the circulation and thus stopping the pain. Used for this purpose the dose should be 0.30 gram (5 grains), of the citrated caffein, and if there is no improvement in an hour, 0.15 gram (2½ grains) more may be given.

3. As a muscle stimulant, coffee and tea or caffein can be given to aid the endurance of any forced muscle work, especially valuable to soldiers on forced marches, but if such stimulation is frequently repeated the reaction is not satisfactory, in fact, depression will occur.

4. As a simple diuretic, caffein is rarely used, though its good auspices in this line are often sought in cardiac weakness with edema, but cardiac edema is better treated by digitalis unless there is some contra-indication to the latter and its congeners. In renal or hepatic dropsies it may be of some value, but other diuretics are better, if in fact a diuretic is indicated at all. As a diuretic, theobromin is better than caffein. To cause diuresis in general dropsy or in ascites, caffein must be pushed. This drug in ordinary dose does not irritate the kidneys or genitourinary organs, but in acute inflammation of these parts coffee and tea should be stopped.

5. As an antidote, caffein as such or as strong coffee is indicated in any depressant narcotic poisoning as by opium and its alkaloids, chloral, bromids, and other cerebral and spinal depressants. It is, as above stated, always a respiratory and circulatory stimulant. Enough caffein should be given to get decided improvement of the pulse. Strong coffee may be given by mouth or rectum, or caffein may be given hypodermatically. As an antidote to alkaloids in the stomach, tea containing a little tannic acid might be quickly used as a precipitant, but the precipitate soon dissolves in weak hydrochloric acid and in alcohol, hence alcohol should not be given at the same time that tannin in any form is used as a chemical antidote.

Contra-Indications.—The contra-indications to the use of caffein are palpitation, irritable heart, high blood-pressure, arteriosclerosis, cerebral or spinal inflammations or irritations, insomnia, neurasthenia, and acute genitourinary inflammation.

Official Preparations.—*Caffeina Citrata,* citrated caffein, is a white, bitter, sour, odorless powder, containing 50 per cent. of caffein, very soluble in water. The dose is from 0.10 to 0.20 gram (from 1½ to 3 grains), three times a day, or 0.30 gram (5 grains) used once.

Caffeina Citrata Effervescens, effervescing citrated caffein (caffeina, citric acid, sodium bicarbonate, and tartaric acid), dissolved in water makes a pleasant effervescing acid drink of caffein. Dose is a teaspoonful to a dessertspoonful, in a glass of water.

Non-Official Preparations.—*Caffein-Sodium Cinnamate* is a good preparation for hypodermatic use. The dose by the stomach is 0.20 gram (3 grains). Other non-official preparations are: *Caffein Hydrobromid, Caffein-Sodium Salicylate,* and *Caffein-Sodium Benzoate.*

A number of effervescing, non-official preparations containing caffein are found in the shops combined in so-called headache powders with acetanilid, antipyrin, phenacetin, or with one or more bromids. While these preparations are often elegant and efficient, the laity should be discouraged from their indiscriminate and, especially, frequently repeated use, as the bromo-caffein or other stimulo-sedative habit is easily acquired, and the outcome is a nervous heart and a neurotic and neurasthenic tendency. It should be distinctly remembered that it has been proved that the addition of caffein to any coal-tar product, whether acetanilid or some other, does not prevent the depression caused by the coal-tar synthetic, and in fact seems to add to its toxic effect.

Administration.—Caffein is absorbed rapidly and acts quickly, and its action lasts several hours. There is no cumulative effect. For continuous action it should be given three or four times in twenty-four hours. In acute indications it should be repeated every hour for a few doses. If it causes sleeplessness, the evening dose should be omitted. It is best given as caffeina citrata, dry, in capsules. For headache and for cerebral stimulation it is best given as strong black coffee or as tea, or as an effervescing caffein. Caffein may be used hypodermatically in dose of 0.05 gram (¾ of a grain), but it may cause a little pain, for a short time, at the point of introduction. Caffein-sodium benzoate is perhaps the best form for hypodermatic use. Caffein hydrobromid and caffein-sodium cinnamate are also used hypodermatically.

CONGENERS

THEOBROMIN

Theobroma (θεός, a god: βρωμα, food, "food of the Gods") or cacao, the native name (often called incorrectly cocoa) or chocolate, is made from the seeds of a large tree, *Theobroma cacao*, of Brazil and Central America. These seeds contain theobromin. Theobromin (dimethylxanthin) contains more nitrogen than caffein, and can be prepared synthetically from xanthin. Chocolate contains about 1 per cent. of theobromin, from a trace to 0.25 per cent. of caffein, and a large amount of fat (cacao butter from 30 to 50 per cent.), starch, albumin, and a little volatile oil. As all these latter constituents are assimilable, chocolate is a food. The seeds of the cacao tree, ground while warm with about an equal weight of sugar, and often flavored with 0.5 per cent. of cinnamon or other aromatic, makes the ordinary chocolate ready for solution in water or milk. Chocolate so prepared contains only a trace of caffein.

Theobromin does not stimulate the nervous system, hence it can be given when caffein, tea, or coffee are contra-indicated. Chocolate is rather rich and heavy for digestion in a weak condition of the stomach, hence chocolate is made for convalescents freed from oil and not sweetened. Theobromin has its greatest action on the kidneys, and is a pretty sure non-irritating diuretic. As above stated, it has no action on the nervous system, and but little action on the circulatory system.

Official Preparations.—Oleum Theobromatis, cacao-butter, is a fixed concrete oil expressed from the seeds of theobroma cacao. It is a yellowish-white solid, with a faint odor and taste of chocolate. It melts at the temperature of the body, and hence makes a splendid base for suppositories, one gram (15 grains), being the ordinary amount used for a rectal suppository. It makes a bland, soothing emollient application for irritations on the skin, for sun-burn, etc. It is sometimes adulterated with paraffin, wax and tallow.

Non-Official Preparations.—Theobromina is a crystalline bitter powder rather insoluble and but slowly absorbed. It is obtained from the seeds of theobroma cacao, and is also made synthetically. *Theobromina Sodio-Salicylas* (Diuretin) is a mixtures of equal parts of sodium theobromin and sodium salicylate, containing when pure 50 per cent. of theobromin, but ordinarily only 40 per cent. It is a white, odorless, salty powder, soluble in water. The dose is 1 gram (15 grains), given in aromatic solution or in capsules, generally three times a day, but it is often advisable to give it every three or four hours. It is largely used as a diuretic, as it acts on the renal epithelium without irritation, hence it can be used in both acute and chronic nephritis, and in cardiac and hepatic dropsy. In all ordinary doses there is no effect other than the diuretic. Rarely it produces nausea and headache, but this is probably due to impurities. Ex[illegible] [illegible]ng can be caused with symptoms [illegible] and dyspnea, increased temperature and some nervousness.

Theophyllin is another purin derivative found in tea, and is isomeric with theobromin (dimethylxanthin). It somewhat stimulates the nervous system, and is also a stimulant to the muscles. It is at times an active diuretic. It often causes severe irritation of the stomach, even when administered after meals.

It is a white, crystalline powder, almost insoluble in water, but in combination with sodium (theophyllin sodium) it is very soluble. The dose of either is 0.25 gram (4 grains). *Theocin* is a synthetic theophyllin.

GUARANA (BRAZILIAN COCOA)

Gaurana, gauranæ, is a dried brown paste made of the crushed seeds of *Paullinia sorbilis*, which is a climbing shrub, native of Brazil, named from Paullin, a German botanist living from 1643 to 1712; *sorbilis* is from *sorbere*, to suck or to drink. Gaurana is the name of a tribe of South American Indians. This drug contains from 4 to 5 per cent. of caffein theobromin, and about 26 per cent. of tannic acid, a trace of volatile oil, a resin, and a starch. The caffein of this drug has been called *gauranin*. The dose of gaurana is about 2 grams (30 grains). It acts like caffein and is stimulant to the nervous system. It is astringent on account of its tannic acid, and sooner or later upsets the appetite and causes dyspepsia. It is used for ordinary migraine headache, and in nervous and menstrual headaches, and also sometimes is used as a restorative after a drinking debauch. A gaurana habit can be formed.

Official Preparations.—Fluidextractum Gauranæ, fluid extract of gaurana. Dose, 5 c.c., or a teaspoonful.

KOLA

Cola-nut, *Cola acuminata*, is a large tree of Central Africa. The cola-nut contains about 2 per cent. of caffein, theobromin, starch, sugar, and a volatile oil. It acts like coffee and cocoa, and has been used as a food.

Kolanin is probably a mixture of caffein, theobromin and tannic acid.

The fluidextract of kola has been recommended as a muscle stimulant, as it has been proved that more physical labor can be done under the influence of kola when other food is withheld than without it. This is probably a caffein activity, in other words, depression must follow such stimulation.

Barium Sulphate and Serodiagnosis of Syphilis.—From the experiments of H. Noguchi and J. Bronfenbrenner, reported in the *Journal of Experimental Medicine*, it is clear that the absorption by barium sulphate is not directed in a selective manner to the antibodies. Barium sulphate has almost no anticomplementary action on guinea-pig serum. A light antihemolytic effect has been noticed when 1 c.c. of a 7 per cent. suspension of this salt was mixed with 0.05 c.c. of the complement. Barium sulphate removes both the anticomplementary substances and the syphilitic antibodies. The addition of one part of normal serum to one part of syphilitic serum reduced the removal of the antibodies to one-half of that obtained when no normal serum was added, and the addition of four parts of the normal serum to one part of syphilitic serum reduced the removal to about one-fifth. This indicated undoubtedly that the normal serum employed possessed the same affinity as the syphilitic antibodies for barium sulphate. The syphilitic antibodies are removed by barium sulphate (to which they seem to adhere), and the antibodies thus absorbed retain their activity. Several experiments were performed with antihuman amboceptor (rabbit), and the results show that the amboceptor is quite readily removed from the solution by barium sulphate absorption. The barium sulphate treated with the amboceptor solution retains the amboceptor and causes hemolysis when mixed with human corpuscles and guinea-pig complement. They conclude, therefore, that the barium sulphate absorption is to be recommended for the original method of Wassermann under certain conditions, but that it is unnecessary for the antihuman hemolytic system of Noguchi.

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THE ROCKEFELLER COMMISSION FOR THE ERADICATION OF HOOKWORM DISEASE

The whole rationale of lessening the evils of such social plagues as alcoholism, tuberculosis. hookworm infection and venereal disease lies obviously in educating the people up to the point of working out their own salvation. What has been accomplished by public exhibitions and lectures, by well-written popular articles in current magazines and periodicals and by direct personal appeal from physicians themselves, is far from insignificant, and what can be accomplished in a very short time is strikingly shown in two recent reports of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease. This commission was organized in October, 1909, and opened its offices in January, 1910. The work done to date is described in two reports, one by the administration secretary, Mr. Wickliffe Rose, the other by the scientific secretary, Dr. Charles W. Stiles, to whose important work the formation of such a commission was undoubtedly due. As stated by Mr. Rose, the task set for itself by the commission was to map out the geographic distribution of the infection. to effect a cure in existing cases and to remove the cause—in this case the pollution of soil by country privies and the use of human excreta as a "fertilizer."

Taking separate states as units for investigation. the commission cooperated with the various boards of health in appointing a director of sanitation in each state under whose direction a field force of sanitary inspectors was soon set to work. In addition, the public health laboratories of most of the southern states coöperated in the matter of making microscopic examinations of patients' stools. By combining the reports of the sanitary inspectors with the laboratory records used to check up their work, scattered hookworm infection has been demonstrated in all the southern states, including Tennessee and Kentucky, as also in Oklahoma, Nevada and California. Infection is particularly heavy in Virginia (ninety-one out of 100 counties), North Carolina (ninety-seven out of ninety-eight counties), Georgia (108 out of 145 counties), Alabama (sixty-three out of sixty-seven counties) and Mississippi (sixty-five out of seventy-six counties). In the mines of California it is reported so heavy as to be a matter of great economic moment. The degree of infection in foreign countries is also in process of investigation.

The task of treating present sufferers from the disease is threefold, involving, first, the cooperation of private practitioners by means of bulletins, letters and personal interviews; and second, the task of interesting the people in their own welfare through public demonstrations as object-lessons, medical examinations of school and factory children, laboratory diagnoses, free lectures and the dissemination of tracts; third, proper treatment of the infected poor by means of voluntary contributions and free treatment, as in Virginia and North Carolina, free dispensaries, as in Mississippi, or by the payment of a special bonus for each patient cured, as in Florida. The results of these various activities, as tabulated in Mr. Rose's report, are significant.

The most satisfactory cooperation of physicians in the general treatment of the disease was naturally secured in states having the greatest density of infection, as in North Carolina, Georgia or Virginia, and the same is true of the number of diagnoses made and the number of patients cured. The newspapers of nearly all the southern states were in thorough sympathy with the movement. It is interesting to note that the newspapers of Mississippi and North Carolina were at first humorously indifferent or resentfully antagonistic, but are now practically all of them in cordial cooperation.

During the first year of its administration the Rockefeller commission has spent over $47,000, while about $13,000 has been spent by the different southern states, making a total expenditure of a little over $60.000 for the eradication of hookworm infection in 1910. The best showing made by any state so far is that of Florida, for the reason that the board of health of that state is maintained by a mill fund of about $75,000 per annum. With such a sum at their disposal it was natural that the Florida public health authorities should have instituted a campaign against hookworm infection before the Rockefeller commission came into being. Since the organization of the commission they have cooperated with its work in a most admirable way, supporting themselves and spending nearly nine thousand dollars to this end. including a sum of $1,806 expended in payment for treatment of poor patients (a bonus of $3 for each patient successfully treated). During the year 1910. bacteriologic laboratories were established at Jacksonville. Tampa and Pensacola, and in these over 7.000 examinations for hookworm were made. A map investigation of the status of hookworm infection in Florida shows that "there is hardly a physician in the state not treating hookworm disease." and that even if the state board were to relinquish the work "the hookworm problem will now solve itself. so far as it can be solved."

The general effect of the propagandism of the Rockefeller Commission can best be ascertained by comparing Mr. Rose's statements in reference to Porto Rican and

American conditions. In Porto Rico, "the infection is severe, the people are sick, they know they are sick, and have learned that they can be cured." In the United States the infection is scattered and relatively light, and the people were at first not disposed to take it seriously; but as they gradually come to perceive its true significance "they come to look on it as they have been accustomed to look on tuberculosis, typhoid fever, or any other serious preventable disease."

The removal of the principal cause of hookworm infection by doing away with soil pollution is the main subject of Dr. Stiles' report. Very effective preventive measures are about to be introduced. Since Looss demonstrated that the hookworm usually enters the body through the skin, reaching the intestines by a devious route, all preventive measures have been concentrated on the surface of the body, in particular the hands and feet of those exposed to infection. The hookworm commonly thrives where it is warm and moist, as in mines, tunnels and cultivated fields. Pollution of the soil is perpetuated by those frankly suffering from hookworm disease, and also by "hookworm carriers," who, like the typhoid carriers, spread disease, although apparently free from it themselves.

Viability experiments, conducted under the direction of the Marine-Hospital Service, show that the mere burial of excreta does not prevent the eggs of the hookworm and other parasites from hatching. Such an expedient might prove an actual agent in infection, especially in the limestone regions. Sewerage is not practicable in the open country, and most of the surface privy systems in vogue are shown to be either faulty or unhygienic. Statistics show, moreover, that a large percentage of southern farms have no privies of any kind. The schools, churches and sawmills in the rural districts seldom have privies attached.

The crux of the hookworm question is, therefore, the contamination of the hands and feet of the country people by fecal matter, and the solution of the problem is in the sanitary privy. As Stiles puts it, "The privy is the great sanitary problem of the open country and the non-sewered village," and most of his recent experimental work, as set forth in his report, has been concentrated on this all-important point. During the past year Stiles, Lumsden and Roberts have devised a simple, inexpensive and practically odorless privy-trap which should assist materially in solving this problem. Improvements in this apparatus are now being made and models have been loaned out to different organizations for exhibition purposes.

A reading of these reports shows that in the short space of a year's time the beginnings of a splendid piece of prophylactic work have been made. The problem of a suitable sanitary privy for our rural population has been practically solved, and all that is needed is the cooperation of the country people themselves. To the missionary work of the Rockefeller Commission and the Marine-Hospital Service the southern newspapers have, in the main, given cordial cooperation, and we cannot too strongly insist on the importance of their most resolute support to this movement.

THE PRESENCE OF BACILLI IN HEALED TUBERCULOUS LESIONS

Just what constitutes healing of a tuberculous lesion is a matter of much importance and great uncertainty. It is now recognized that nearly all adult bodies contain calcified, fibroid, or encapsulated caseous tuberculous lesions, chiefly in the lungs and lymph-glands, and such lesions are commonly looked on as healed and devoid of danger. Recent studies, however, have demonstrated that the tubercle bacillus has remarkable powers of resistance which permit it to remain viable in the tissues of the host for great lengths of time, and even without producing lesions. It may be recalled that various investigators who have injected material from the lymph-glands and tonsils of cadavers into guinea-pigs, have produced tuberculosis in as high as 20 per cent. of the animals, although the glands were themselves free from either gross or microscopic evidence of tuberculosis, and were from bodies which showed no tuberculous lesions. Such a condition constitutes a true latent tuberculosis, even although there are no specific tuberculous lesions, and its apparent frequency makes us more lenient than we otherwise might be to von Behring's theory that bacilli taken in cow's milk during infancy and remaining latent during youth and adolescence constitute an ordinary source of tuberculosis in adults.

The cases in which a tuberculous lesion shows anatomic evidence of quiescence, yet contains living and virulent bacilli, should be regarded as persistent rather than latent tuberculosis. Apparently caseous tubercles practically always contain living bacilli, even when their progress has been checked and they are surrounded by a well-defined fibrous capsule. Until recently it was assumed that when calcification had taken place the lesion had been so long encapsulated that all the bacilli must be dead, but actual investigation has made it necessary to modify this view. Lydia Rabinowitsch injected into guinea-pigs material from four calcified lymph-glands of stony hardness, and in all cases tuberculosis resulted. E. Schmitz examined calcified nodules from twenty-eight autopsies, and could find tubercle bacilli with the microscope in but two; but of thirty-three guinea-pigs inoculated with material from as many calcified nodules no less than thirteen became tuberculous. As was to be expected, positive results were obtained much more frequently with material from the chalky or caseo-calcareous areas (75 per cent.) than with those of stony hardness and presumably greater age (27 per cent. positive). An important fact is that the tuberculosis produced by such inoculations was of a mild character, only one of the infected animals dying spontaneously from tuberculosis. By use of the new alkaline hypochlorite method Wegelin[1] has been able to demonstrate the tubercle bacilli much more frequently in calcified lesions, in each of three chalky and in four of ten hard calcified nodules bacilli being found.

We must, therefore, conclude that even when a tuberculous lesion has become encapsulated and calcified it is still a possible source of danger, since it may contain living tubercle bacilli. Nevertheless this danger is more potential than actual, for the mechanical protection afforded by the capsule and the lime salts must effectually prevent invasion of other tissues by the bacilli, and we have no observations which indicate that a calcified lesion is often, if ever, the starting-point of a fresh infection. Possibly if a suppurating process, or some trauma, disintegrated both capsule and lime deposits the bacilli might be set free, but even then serious trouble is not probable, for, as Schmitz' experiments have shown, the encapsulated bacilli are of such low virulence that even the susceptible guinea-pig can resist them successfully.

UNRELIABLE PHARMACEUTICAL PRODUCTS

For some years past, pharmaceutical houses have put out in tablet form an enormous number of combinations of drugs of real or fancied value. In many instances the combinations are not suited to the tablet form and it is not surprising that many of these tablets do not conform to the composition that is claimed for them. It is not to be inferred that the manufacturers wilfully put up products that are false to label, but rather that many of the combinations are pharmaceutical impossibilities. That is to say, it is pharmaceutically impossible—or at least, commercially impracticable—to manufacture, in tablet form, some of the combinations that are listed in the manufacturers' catalogues.

These tablet-combinations have been offered to the medical profession primarily because such products are considered as "business-getters" and the manufacturers seem to have tried to outvie one another in the number of combinations which they offer physicians. In most cases these tablets have been made, not to supply, but to create a demand, and as soon as one manufacturer has put out a new combination, his competitors immediately put similar combinations on the market. The result has been harmful to medicine and a discredit to pharmacy.

With the object of showing how pharmaceutically impossible it is to make some of these tablet-combinations, our chemists were asked to examine some of the several brands of tablets said to contain bismuth subnitrate, opium and phenol (carbolic acid). While this tablet is, in itself, of comparatively little importance, it was selected as a type because practically all pharmaceutical houses offer it for sale, because its manufacture offers some difficulties and because its phenol-content can be accurately determined. More than two years ago, the leading brands of these tablets were bought in open market, analyzed by the Association's chemists and the results published in THE JOURNAL.[1] Two years later, similar products of the same firms were again purchased, analyzed and the results published.[2] Both of these reports showed that the composition of the tablets examined—at least so far as their phenol-content was concerned—could not be relied on. The second examination brought out the further fact that practically all the manufacturers whose products had been examined had apparently made no effort either to modify the claims on the labels, to improve the quality of the tablets or to withdraw the product from the market.

In the "Propaganda for Reform" department of this issue appears the third, and final, article from our chemical laboratory on this subject. It will be found not only to verify the statements of the previous two articles, but also to bring out another point that is of almost as great importance as the unreliability in composition, namely, that ready-made mixtures of this type are more than likely to be several years old before they reach the physician. While this does not, of necessity, impair the efficiency of all drugs, it must in many instances be detrimental to scientific prescribing.

The three exhaustive and painstaking examinations made in the Association's laboratory and the articles that are based on these examinations teach some valuable lessons, both specifically and generally. Specifically, they show that there are probably no tablets of bismuth, opium and phenol on the market which contain the amount of phenol stated on the label; this, too, even though the tablets are obtained direct from the manufacturer. It is true that in one case the tablets obtained direct from the manufacturer contained not only all the phenol claimed, but a very appreciable percentage in excess of that amount. These tablets, however, bore such evident marks of having been "made to order" that the general findings of the laboratory were in no way vitiated. Essentially then, it has been proved that it is impracticable, if not impossible, to manufacture tablets of bismuth, opium and phenol so that the phenol-content can be relied on.

Generally, the results are of even greater importance. First is the very evident unwisdom of attempting the pharmaceutically impossible merely for the sake of achieving pharmaceutical "elegance." When one considers the enormous number of tablet combinations on the market—some firms listing over a thousand—and further realizes that undoubtedly in a great number of cases such combinations are absolutely worthless so far as accuracy of dosage is concerned, the menace that such forms of medication must be to scientific medicine becomes apparent.

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[1] Wegelin: Cor.-Bl. f. Schweiz. Aerzte, 1910, xl, 913.

[1] July 25, 1908, p. 330.

[2] Dec. 17, 1910, p. 2169.

Second is the responsibility that rests on the pharmaceutical manufacturer for the deplorable conditions that these investigations have exposed. Physicians naturally have supposed that they could rely on the statements of such pharmaceutical firms as those whose products are affected in this exposure, at least so far as the composition of non-proprietary preparations is concerned. The defections are those of the manufacturing pharmacists. It is no excuse for them to say that they are but supplying a demand when they put out such products. The physician, of necessity, does not always realize the limitations to the art of compounding drugs and it has long been considered the function of the pharmacist to enlighten him on such technical points. In the present instance, however, the physician, instead of being advised, has been taken advantage of. Further, as has already been stated, the manufacturers are not so much supplying a demand as attempting to create a demand. Moreover, if they wish to retain the confidence of physicians they should frankly admit, when asked to put up combinations that are not pharmaceutically practicable, that it cannot be done. Instead of taking this attitude, they seem to have decided that, so long as there is money in pretending to make tablets that cannot be made, they might as well get what financial benefit they could out of the pretense.

In view of the facts brought out by our chemists, we are justified in asking a question: We know that the products examined were untrue to label when first taken up over two years ago: we know, further, that the same class of products were equally unreliable two years later, when examined the second time; we also know that still more recently these tablets, even when purchased direct from the manufacturer, are not to be depended on. Twice The Journal has given publicity to the unreliability of these products, but the manufacturers have neither profited by it nor apparently paid any attention to it. Now, for the third time, attention is directed to the same conditions. We are justified in asking, therefore: Will reputable pharmaceutical houses continue to put on the market products which they know to be not only unscientific but actually fraudulent, simply because it is "business?" The medical profession awaits the answer.

Current Comment

ROCKY MOUNTAIN SPOTTED FEVER

Through the work of the late H. T. Ricketts and others, it was demonstrated that Rocky Mountain spotted fever, an important disease in man, is conveyed by the common wood-tick of the Rocky Mountains. The disease has been found in its most virulent form in the Bitter Root valley in western Montana, the mortality in this section being from 70 to 80 per cent. The importance of ascertaining the distribution of the tick which is responsible for the transmission of such a deadly disease became apparent and, accordingly, the Bureau of Entomology of the United States Department of Agriculture in 1909 began a study of the distribution of this insect. The result of that study is published in Circular 136 of the bureau. In the investigation, specimens of the species causing the disease, *Dermacentor venustus*, were obtained from 225 different localities, embracing the states of California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. While there are no doubt areas of considerable extent within the territory named where the tick is entirely absent, yet its distribution is much wider than was thought before this investigation, but entirely within the Rocky Mountain region. Specimens have been collected at various elevations, from 500 feet to nearly 9,000 feet above sea level. The species seems to reach its highest development and occurs in greatest numbers between 3,000 and 5,000 feet. The immature ticks have been found to feed exclusively on the small mammals and the adults on the large domestic animals. The fever may be transmitted to man in any region where this species of tick is present if the disease is once introduced into a locality by a tick from an infected region, or by man or some other animal susceptible to the malady. There is reason to believe that the disease is spreading, and therefore a knowledge of the range of this species of tick is important, so that steps may be taken to lessen the danger of its introduction into regions as yet uninfected.

A POINT IN THE MANAGEMENT OF THE INSANE

Recently a patient, having been tried, found insane, and ordered sent to an institution, was turned over to the sheriff for safe delivery. The sheriff deceived the patient, a paretic who suffered from grandiose delusions concerning money and property matters, into thinking that he was to inspect a large institution which might be made into a hotel. Thus the patient went peaceably to the insane asylum and the sheriff, having done all that he thought was required of him and transferred his charge to other hands with the least possible trouble to himself, left well satisfied with his finesse; and doubtless most persons who have had little or no experience in the care of the insane would consider his satisfaction justified. Soon the patient saw that his orders about the hotel property were not obeyed, and thus learned that he had been duped. So he protested, resisted and fought and, in spite of careful handling, sustained some bruises; his relatives raised complaint and the institution received scare-head publicity on the first page of the newspapers. An investigation was called for and held, and the exoneration of the authorities received a few lines on an inside page. The state authorities who made the investigation directed the superintendent of the institution, in the future, to make a statement to each patient brought to the institution, in the presence of the sheriff and his attendants, to the effect that the institution was an insane hospital and that the patient had been committed by law to its charge and must obey its rules and regulations. This precaution should be generally adopted.

A STRONG TESTIMONIAL

We have been interested recently to note a faint modern recrudescence of a horrific fable of our youth. Most of us have read blood-curdling tales of individuals who suddenly became human volcanoes, belching forth fire and smoke, and were in a short time utterly consumed. To judge by a recent testimonial, the ghost of the slain theory of spontaneous combustion of the human body still walks the earth. A Chicago woman testifies to her sufferings before treatment by the "United Doctors," a concern employing a number of peripatetic doctors who operate in the smaller towns in various parts of the country:

> "At this time my heart became affected also and my suffering was greatly increased by its disturbed action, causing what is commonly called 'hot flashes.' These 'hot flashes' added greatly to my misery and at times the heat from my head would burn and scorch the combs in my hair."

Needless to say, after receiving "treatment" from these noted specialists, the poor patient was restored to her former condition of well-being and comparative frigidity, and the underwriters' rates on property in her immediate neighborhood were immediately lowered.

RACE SUICIDE IN FRANCE

Statistics cited in this issue by our Paris correspondent throw an interesting light on the problem of the diminishing birth-rate in France. It seems that an official investigation has been undertaken to ascertain the probable cost of assistance to needy large families. We are told that there are in France 369,739 families having each more than four children aged less than 13. There are in these families 1,712,322 children. Nearly two-thirds of these families—237,802 to be exact—are in a permanently needy condition. When one remembers the social habits of the careful middle-class Frenchman, which render it most discreditable for a father to fail to make suitable provision for his son's start in life and his daughter's dowry, and when it appears that the greater number of the parents with large families are unable to provide, not merely for their children's future, but even for their present necessities, it becomes evident that measures against "race suicide" will have to go very deep in order to be effective.

Medical News

ALABAMA

New Hospital.—At the last meeting of the Medical Society of St. Clair County, a fund of about $5,000 was raised for the construction of a hospital at Pell City.

Antituberculosis Camp.—Through the efforts of the Montgomery Antituberculosis League, a camp has been secured for that city. Miss Julia Johnston has been elected secretary of the league.

State Society Meeting.—The annual meeting of the Medical
Association of the State of Alabama was held in Montgomery,
April 18 to 21. The following officers were elected: president,
Dr. Lewis Coleman Morris, *Birmingham*; vice-presidents, Drs.
Martin Luther Malloy, Birmingham, and Charles Lee Guice,
Gadsden; special officers of *the tuberculosis league*, Drs. Geo.
McWhorter, Riverton, and Benjamin Leon *Wyman*, Birming-
ham, and *members of the medical council*, Drs. John C. Mc-
Leod, Bay Minette; Thomas M. Littlepage, Mount Sterling;
William Alexander Graham, Fayette; Robert Henry Baird,
Cullman; Edward Harris and Wellington Prude McAdory,
Birmingham. The Jerome Cochran lecture was delivered by
Dr. Rudolph Matas, New Orleans, and was on tuberculosis.

ARKANSAS

Elections.—At the annual meeting of Logan County Medical Society, held in Magazine, April 5, the following officers were elected: president, Dr. John S. Shibley, Booneville; vice-president, Dr. Richard A. Harkins, Ratcliffe; secretary-treasurer, Dr. Austin R. Hederick, Booneville; delegate to the state society, Dr. Early E. Scott, Magazine, and alternate, Dr. E. M. Life, Scranton.——At the annual meeting of the Tenth Councilor District Medical Society, held in Rogers, March 21, the following officers were elected: president, Dr. John Young, Springdale; *vice-president, Dr. Ernest G. Epler, Fort Smith;* secretary, Dr. Dred R. Dorente, Fort Smith, and treasurer, Dr. Othello M. Bourland, Van Buren. The next meeting will be held in Fort Smith.——At the annual meeting of Lawrence County Medical Society, held at Walnut Ridge, Dr. Horace R. McCarroll, Walnut Ridge, was elected president; Dr. Wight W. Hatcher, Imboden, vice-president; Dr. John C. Swindle, Walnut Ridge, secretary; Dr. John C. Hughes, Walnut Ridge, treasurer; Dr. Gus A. Warren, Black Rock, delegate to the state society, *and Dr. William J. Robinson, Portia, alternate.*

CALIFORNIA

Personal.—Dr. E. S. Metzger has been reappointed a member of the trustees of the Redondo Beach library.——Dr. Alanson Weeks, U. S. P. H. and M.-H. Service, in charge of the United States Marine-Hospital, San Francisco, has resigned to enter private practice.

Medical Milk Commissioners Organize.—On the occasion of the annual meeting of the Medical Society of the State of California, the California Association of Medical Milk Commissioners was organized and the following officers were elected: president, Dr. Thomas McCleave, Alameda; vice-*presidents, Drs. Fitch C. E. Mattison, Los Angeles,* and Thomas A. Stoddard, Santa Barbara, and secretary, Dr. Adelaide Brown, San Francisco.

GEORGIA

Additional Officers.—At the annual meeting of the Medical Association of Georgia, held in Rome, April 19 to 21, the [illegible]ors were elected: first district, Dr. J. Lawton [illegible] second district, Dr. Jarvis G. Dean, Dawson; third district, Dr. Rupert H. Stovall, Vienna, and fourth district, Dr. Charles L. Williams, Columbus; chairman of the board of councilors, Dr. Wyman W. Pilcher, Warrenton, and editor of the *Georgia State Medical Journal*, Dr. Wm. Clifton Lyle, Augusta (reelected). The next meeting of the society will be held in Augusta.

ILLINOIS

Personal.—Dr. Albert Nicholas Mueller has resigned as a member of the board of directors of the Rock Island Municipal Tuberculosis Sanatorium.——Dr. J. T. Foster, Central City, has been appointed coroner of Marion County.——Dr. Emil W. Brust, Addison, started for Berlin, April 3.

Another Hospital for Oak Park.—The West Suburban Hospital Association has been incorporated with a capital stock of $25,000 all of which has been subscribed, and the fifteen physicians who resigned from the Oak Park Hospital are said to make up the incorporators of the new hospital. The new hospital will be located in territory convenient both to Oak *Park and Austin.*

State Board Convictions.—Mrs. J. Dunn, who claimed that she had made wonderful cures of cancers by the use of a combination of drugs and who, it is said, had been convicted before in this state, was convicted by a jury in the Municipal Court of Chicago, of violation of the Medical Practice Act, and fined $200.——M. Janik, said to be an old offender who conducts the Cracow Institute, and makes his own medicine, was convicted by a jury in the Municipal Court, and fined $200 and costs.

Chicago

Hospital Acquires Property.—The Provident Hospital *has* acquired property north of its building at Thirty-Sixth and Dearborn Streets, which will be used for the *children's department* of the institution.

To and from Europe.—*Dr.* and Mrs. Clarence E. Brinckerhoff and Dr. and Mrs. Wallace Blanchard have sailed for Europe.——Brigadier General Alfred C. Girard, U. S. Army, retired, and Dr. and Mrs. Theodore Wild, Jr., have returned from *Europe.*

INDIANA

Personal.—Dr. T. Victor Keene has been appointed a member of the board of health of Indianapolis, vice Dr. Paul F. Martin, to take effect June 1.——Dr. Herman Bowles has succeeded Dr. Clarence G. Rea as secretary of the board of health of Muncie.——Dr. Harold Pierce, Cloverland, is reported to be seriously ill with septicemia due to an operation wound. Dr. Orange G. Pfaff of Indianapolis is just recovering from infection and will go to Atlantic City.——Dr. Roscoe H. Ritter, secretary of the Indianapolis Medical Society, is critically ill at a sanatorium in Martinsville.

Ice Cream Standardized.—The State Board of Health calls the attention of all ice cream manufacturers in the state to the standard for ice cream in Indiana. Hereafter all ice cream shall have a minimum of 8 per cent. of butter fat, and 18 per cent. of milk solids and not to exceed 0.7 per cent. of gelatin or vegetable gums. Fruits, nuts, candied and preserved fruit and nuts, chocolate and other similar products should be classed as flavorings, and all ice cream containing such ingredients shall conform to the standard above specified. The addition of any color or coloring matter to ice cream to make it appear richer in butter fat, or the use of fruit color to counterfeit the color of strawberry, cherry, peach, etc., is not allowed, unless the goods are marked imitation and declare the presence of the color.

District Society Meeting.—The spring meeting of the Eighth District Medical Society was held in Portland, April 21, and was devoted principally to a consideration of cholelithiasis. At the afternoon meeting L. Ert Slack, an attorney of Franklin, spoke on "Health," pleading for a broader conception of the healing art, with special attention to the powers of the mind and the necessity of getting the patient's mind in proper attitude. The following officers were elected: Dr. Thomas Monroe Jones, Anderson, president; Dr. Charles E. Caylor, Pennville, vice-president; Dr. Fred McK. Ruby, Union City, secretary; Dr. Charles Leander Botkin, Farmland; Dr. Joseph E. Hall, Alexandria; Dr. Hamilton P. Franks, Muncie, and Dr. Charles Hollis, Hartford City, censors. The next meeting of the society will be held in Anderson, May 9, 1912.

IOWA

New Hospital.—Fort Madison is to have a new hospital to be ready September 1 and to be under the management of the Sisters of St. Francis of the Third Order.

Medical Women to Meet.—The annual session of the State Society of Iowa Medical Women will be held in Des Moines, May 16-17, under the presidency of Dr. Sophia Hinzie Scott, Des Moines.

Personal.—Dr. and Mrs. Carl W. Wahrer sailed for Europe April 12.——Dr. George P. Hanawalt, Des Moines, who has been ill for a long time, has recovered and resumed practice. ——Dr. Horace Husted has been elected health officer of Muscatine, vice Dr. Benjamin Ernest Eversmeyer.——Dr. Jay Clark Cooper, Villisca, sailed for Europe April 20.——Dr. Fred Albert has been reappointed health officer of Mason City. ——Dr. Edward Tyler Edgerly has been appointed city physician of Ottumwa.

KANSAS

Doctors' Building for Wichita.—In the new Schweiter building, Wichita, not yet entirely ready for occupancy, twenty-eight physicians thus far have arranged to rent offices.

State Hospital for Western Kansas.—Ellsworth, Scott City, Great Bend, Spearville, Norton, Wakeeney, Hill City, Larned, Downs, Ashley and Ashland make up the list of western Kansas towns thus far desiring to be considered as candidates for the location of the new state tuberculosis hospital for which $100,000 was appropriated by the last legislature.

Hospital Staff Organizes.—Twenty-four physicians of Salina were present at a meeting of the staff of St. Barnabas Hospital, April 18, called for organization. Dr. Oliver D. Walker was elected temporary president, and Dr. Jesse Wheeler temporary secretary. For permanent officers Rev. S. M. Griswold was elected president; Dr. Jonathan Harvey Winterbotham, secretary, and Drs. Oliver D. Walker, Howard N. Moses and Melchor Cockay were elected a committee to arrange the times of service for members of the staff.

Medical Society Meetings.—At the annual meeting of Smith County Medical Society, held in Smith Center, April 12, Dr. James A. McCammon, Reamsville, was elected president; Dr. Victor Watts, Womer, vice-president; Dr. Frank Relihan, Smith Center, secretary-treasurer, and Dr. Francis M. Bilby, Kensington, delegate to the State Medical Society.——At the semi-annual meeting of the Southeast Kansas Medical Association held in Independence in April, Dr. Giles A. Blasdel, Garnett, was elected president and Dr. Elmer A. Miner, Independence, secretary. The next meeting will be held in Parsons.

KENTUCKY

Ten-Cent Day.—On April 20 ten-cent day was celebrated in Louisville. The purpose of this scheme is to solicit a subscription of 10 cents from every inhabitant of Louisville, the money realized from the campaign to be turned over to the State Antituberculosis Association.——At the annual meeting of the association, held April 3, W. R. Belkner was elected president; Dr. Sam A. Hartwell, Jr., second vice-president, and Dr. Ellis S. Allen, a member of the board of directors.

LOUISIANA

Site Selected for Isolation Hospital.—The board of health of Hammond has selected a site in the southwest part of town for the new isolation hospital, the erection of which will be proceeded with at once.

Senior Student Dies.—Leon Fereol Beridon, an intern in the Charity Hospital, New Orleans, and a senior student in the Tulane University; a young man of brilliant promise; died in New Orleans, April 6, from typhoid fever, aged 23.

New Parish Society.—Jackson Parish Medical Society was organized April 20 at Eros, and the following officers were elected: president, Jacob H. Landrum, Eros; vice-president, B. E. Brown, Chatham; secretary-treasurer, Dr. A. E. Douglas, Chatham.

Sanitarium Staff Organized.—The staff of the Schumpert Memorial Sanitarium, Shreveport, has been organized with the following officers: president, Dr. J. Ashton Blanchard; vice-president, Dr. Joe J. Frater; secretary, Dr. Jacob Mahne Bodenheimer, and treasurer, Dr. Lewis Henry Pirkle.

Personal.—Major John A. Devron, Jr., M. C. N. G., La., assigned to the Second Infantry, has been detailed for duty at the maneuvers on the Mexican frontier.——Dr. Charles Chassaignac has been appointed chairman, and Dr. John Callan a member of the house committee, and Dr. Louis G. LeBeuf, a member of the finance committee of the Eye, Ear, Nose and Throat Hospital, New Orleans.

MARYLAND

State Medical Directory.—The April issue of the *Bulletin of the Medical and Chirurgical Faculty of Maryland* contains a directory of the membership of the association, which numbers 1,059, of these 1,021 are active, 18 non-residents and 20 honorary members.

Medicine and Man's Redemption.—Dr. Charles M. Ellis, Elkton, who is at present a patient in Johns Hopkins Hospital, Baltimore, suggests that the triumphs of the medical profession in the Canal Zone be recognized by a great international congress on tropical medicine to be held in Washington the year before the Panama Exposition in San Francisco, to demonstrate what medicine has accomplished for man's redemption.

Baltimore

Personal.—Dr. Robert W. Johnson has been elected president of the Churchmen's Club.——Dr. Francis M. Chisholm has moved to Washington, D. C.——Dr. James M. H. Rowland has been appointed a member of the school board.——Dr. Daniel Webster Cathell is engaged in preparing the twelfth edition of his book on "The Physician Himself" which will be published in the fall.

Hospital Report.—The twenty-ninth annual report of the Baltimore Eye, Ear and Throat Charity Hospital states that during the year 5,870 new patients were treated, 3,932 white, and 1.938 colored. Of these 5.509 wer charity patients; namely, 3,312 in the eye department; 840 in the ear department, and 1,548 in the throat department. There were 1.831 operations performed; 459 on the eye; 319 on the ear, and 1,053 on the throat. Dr. Jesse W. Downey, Jr., is superintendent of the hospital and Dr. Francis J. Hackney, resident physician.

MASSACHUSETTS

Estate Left for Research.—By the will of the late Dr. Walter Remsen Brinckerhoff, who died March 2, the entire estate is left to his son, a minor. In the event of the death of the son, two-fifths of the estate is to go to Harvard College to found a memorial to the wife of Dr. Brinckerhoff, the income to be spent for scientific research on communicable diseases.

MINNESOTA

Personal.—Dr. Charles O. Cooley, Madelia, is seriously ill at his home in Madelia.——Dr. John A. Winter, Duluth, has been appointed assistant in the eye, ear and throat department of the St. Louis County tuberculosis clinic.——Dr. N. L. Linneman, Duluth. has returned from Europe.——Dr. Ignatius J. Murphy has been appointed police surgeon of Duluth.

Association Meeting.—The annual meeting of the Stearns-Benton Medical Association was held, April 20, in St. Cloud. Dr. Harold Lamb, Sauk Centre, was elected president; Dr. Charles Stewart Sutton, St. Cloud, vice-president; Dr. John C. Boehm, St. Cloud. secretary and treasurer; Dr. Warren L. Beebe, St. Cloud, delegate to the state association, and Dr. James H. Beaty, censor.

The Antituberculosis War.—The annual report of the Minnesota Association for the Prevention and Relief of Tuberculosis for 1910 shows that during the year $4,295 was received and $4,740 expended; and that at the end of the year there was a balance in hand of $212.09.——Plans for the St. Louis County Tuberculosis Sanatorium have been accepted and the building will be ready for occupancy in the fall. The institution will have an initial capacity of seventy patients and the first unit will cost $30,000. The sanatorium is located north of Fond du Lac and is 700 feet above the lake level.

MISSOURI

New Hospital.—St. Joseph's Convent of Mercy has raised $300,000 to build the new St. John's Hospital, St. Louis, on a tract near Forest Park with frontage on Euclid and Audubon Avenues and Park View. The institution is estimated to cost $380,000 in addition to the site.

Wants Merit System.—The hospital committee of the St. Louis Society of Medical Research, at its meeting April 25, announced that a bill would be presented before the municipal assembly. asking that a merit system be substituted for the present hospital commission system in the new City Hospital.

Change in Meeting Place.—Owing to the destruction by fire of the state capitol at Jefferson City, the place of meeting of the Missouri State Medical Association has been changed to Kansas City. The meeting will be held on the dates originally set, May 16-18. Headquarters will be in the Coates House and the sessions will be held in the Coates House and Casino Hall, which adjoins the hotel.

Alumni Reunion Dinner.—An invitation has been issued to the alumni of the Missouri Medical College, St. Louis Medical College and Washington University Medical School to take part in a social reunion and dinner at Kansas City, May 17, during the meeting of the Missouri State Medical Association. Tickets stating time and place may be had by addressing Dr. Richard S. Weiss, 346 North Boyle Avenue, St. Louis.

Personal.—Dr. Abra C. Pettijohn, Brookfield, has been reappointed superintendent of State Hospital No. 2, St. Joseph; Dr. E. H. Trowbridge, Kansas City, has been appointed assistant physician, vice Dr. W. E. Carey, Kansas City, resigned; Dr. Ashman H. Vandivert has been reappointed assistant physician, and Dr. Harlan P. Mills assistant physician and bacteriologist.——Dr. Cleveland H. Shutt, St. Louis, has returned from abroad.——Dr. Ernest F. Robinson has been appointed chief surgeon of the Kansas City Terminal Railway Company.

NEW HAMPSHIRE

State Society Meeting.—The one hundred and twentieth annual meeting of the New Hampshire Medical Society will be held at Concord May 11-12. The meeting of the House of Delegates will be held on the evening of May 10, under the presidency of Dr. Alonzo Stewart Wallace. Nashua. On the first day there will be a symposium on ophthalmia neonatorum with general consideration by Dr. Louis W. Flanders. Dover, and a discussion from the standpoint of the general practitioner by Dr. E. C. Batchelder. Dover; and from the standpoint of the specialist by Dr. Charles Francis Nutter, Nashua; a paper on "Medical Practice Laws" by Dr. John Martin Gile, Hanover, and one on "Rational Medical Treatment" by Dr. Elbert A. Landman, Plaistow. Among the important papers to be considered on the second day are those on "Medical Inspection of Schools." by Dr. Zatae Songsdorf Straw of Manchester, and "The Treatment of Medical Subjects by the Lay Press" by Dr. Henry O. Smith of Hudson Center.

NEW YORK

No Vivisection Inquiry.—By a vote of 34 to 11 the senate defeated the Bayne bill creating a commission to inquire into the nature and practice of experimentation on living animals and the status of the present laws regarding vivisection.

Investigation of Hospitals and Penal Institutions.—Following the appointment of a committee for the purpose of investigating conditions in the Matteawan and Dannemora state hospitals. a general investigation by a legislative committee of conditions in all New York prisons, hospitals and penitentiaries is called for by a resolution introduced by Senator Stillwell. The resolution carries an appropriation of $25,000.

Medical Examiners Appointed.—The following have been appointed as members of the State Board of Medical Examiners by the State Board of Regents: Drs. Arthur W. Booth, Elmira; Aaron B. Miller, Syracuse; Henry B. Minton. Brooklyn; Floyd S. Farmsworth, Plattsburg, and Ralph H. Williams, Rochester.

New York City

For Convalescent Home.—Sixty acres of ground has been purchased by the Burke Foundation on Manaroneck Avenue, White Plains, at a cost of $180.000. Cottages will be built here that will furnish accommodations for 300 patients, convalescents of New York hospitals.

Hospital to Teach Hygiene.—The Union Hospital which has leased the old Fordham Hospital building, opened May 1. It will undertake to teach office hygiene, to direct business and professional men, educators and ministers in sanitary conditions under which they should work. The president of the association is Dr. John F. Holmes, and the vice-presidents are Drs. Nathan B. VanEtten and Frederick W. Loughran.

Funds for Hospitals.—The Presbyterian Hospital won a bequest of $100,000 in the Supreme Court when it was decided that the first will of Edward O. Kindberg was valid and that his second will was invalid.——The will of Bernard G. Amend leaves $2,000 to the German Hospital.——The New York Dispensary, having recently established a social service department which takes care of sick persons and on their recovery finds them employment, has had its activities threatened through lack of funds and has sent out an appeal for help.——The Methodist Episcopal Hospital of Brooklyn will receive $5.000 by the will of the late William Lawrence of Goshen. N. Y.——Mrs. Adolph Scheftel has given $10,000 to the Montefiore Home for Chronic Invalids to endow a ward for the treatment of locomotor ataxia. This gift is in memory of Adolph Scheftel.——By the will of Mrs. Alice A. Hicks of Old Westbury, L. I., the Nassau Hospital Association will receive $100,000, and the New York Association for Improving the Condition of the Poor, $50,000.——A special performance at Wallack's Theater, by stage children, netted $4,000 for St. Mary's Free Hospital for Children.

Hospital Saturday and Sunday.—The distributing committee of the Hospital Saturday and Sunday Association announces that $112,000 has been raised this year. The apportionment among hospitals is based on the amount of certified free service given by each hospital, and is as follows: Montefiore Home and Hospital for Chronic Invalids. $9,400; Mount Sinai Hospital, $8,669; St. Luke's Hospital, $5,345; Orthopedic Dispensary and Hospital, $4,786; German Hospital, $4,352; St. Mary's Free Hospital for Children, $4,094; Home of the Sisters of Misericordia, $3,845; Ruptured and Crippled Hospital, $4.768; Post Graduate Hospital, $3,737; Roosevelt Hospital. $3.683; Lincoln Home and Hospital, $3,486; Lebanon Hospital. $3.483; Hospital for the Lying-In Society, $2,610; Beth Israel Hospital. $2.570; Home for Incurables, $2,204; House of the Holy Comforter, $1,940; Isabella Heimath, $1,834; Manhattan Eye, Ear, Nose and Throat Hospital, $1.788; House of Rest for Consumptives, $1,567; New York Eye and Ear Infirmary. $1.432; Babies' Hospital, $1,399; Flower Hospital, $1,360; Sloane Maternity, $1,107; St. Mark's Hospital, $1,048, and Hospital of the French Benevolent Society, $1,007. Many other hospitals received smaller sums.

PENNSYLVANIA

Measles Closes Schools.—Bryn Mawr College and all public, private and parochial schools in lower Merion Township. even Sunday schools, were ordered closed, April 27, by the board of health, until May 8, pending a thorough fumigation by an augmented squad of health inspectors. This drastic action which also prevents all public meetings of children and young people in the township, was taken as a result of the alarming spread of measles.

Dairy Farms Inspected.—In the campaign for pure milk over 50.000 dairy farms are being inspected by the officers of the State Department of Health. After inspections the farmers receive notice from the state commissioner of health that certain conditions must be remedied and are given to understand that unless sanitary improvements are made the public will not accept the milk produced. The reports of the department show that each inspection has been productive of greatly improved sanitary conditions.

Philadelphia

Bequest to Medical College.—By the will of the late Annie Shoemaker, Swarthmore, the Woman's Medical College of Pennsylvania will receive a bequest of $3,000.

Personal.—Dr. John Herr Musser, Philadelphia, sailed for London April 13.——Dr. George W. Norris has been elected visiting physician to the Episcopal Hospital, vice Dr. David L. Edsall, resigned.

Portraits Presented.—At a meeting of the College of Physicians, April 5, portraits were presented to the college of the late Dr. George Couvier Harland and Dr. James Tyson. Both portraits were accepted by Dr. George E. de Schweinitz, president of the college.

Alumni Room for Jefferson.—The alumni association of Jefferson Medical College has appointed Drs. W. M. Late Coplin, George Evans Reading and Pascal Brooke Bland a committee to devise ways and means to secure funds for the perpetual endowment of a room in the Jefferson Medical College Hospital, to be used for the free treatment of any ethical graduate of the college.

Fellowship for Medical Research.—Friends of the late Dr. J. Allison Scott, adjunct professor of medicine in the University of Pennsylvania, have contributed $10,000 for the establishment of a memorial. It has been decided to make this in the form of a fellowship for medical research. About $200 of the interest will be used to help some worthy third or fourth year medical student to complete his course, and the remainder of the interest will be invested until the entire sum is sufficiently large to constitute a proper endowment for research work.

Milk Temperature Regulation Violated.—The board of health's regulation requiring the temperature of milk shipped into this city to be not more than 60 degrees is being violated every day, according to J. W. Pancoast of the Interstate Shippers' Association, for large quantities of milk are being sent daily to the various receiving stations of the large milk dealers at a temperature of 75 to 85 degrees F. The producers think it unfair that farmers who send milk directly to the city should be compelled to conform to this regulation while farmers supplying receiving stations may send milk at any temperature.

Work on Open-Air School Halted.—For the second time the work of installing an open-air school in this city has been interrupted. The present delay arises from a disagreement between J. Horace Cook, superintendent of the board of buildings and Alexander Wilson, secretary of the Phipps Institute. When the project was started, the institute agreed to assume all the expenses of fitting up the class room, furnish warm clothing for the pupils and provide milk and eggs. The plans for fitting up the roof of the McCall School at Seventh and Lombard Streets, were submitted to Superintendent Cook, who says the proposed structure will have a tendency to deface the school building.

Pennsylvania Tuberculosis Society Meeting.—The annual meeting of the Pennsylvania Society for the Prevention of Tuberculosis was held at the College of Physicians, April 11. J. Byron Deacon, the executive secretary, emphasized the need of Hospitals for advanced cases of consumption, a plea that Dr. Lawrence F. Flick has made for several years. Dr. James Tyson declined to serve again as president and Asa S. Wing was elected to the office. Other officers chosen include: vice-presidents, Drs. James Tyson, Joseph S. Neff, William Duffield Robinson, William Charles White and Talcott Williams; treasurer, Dr. James Gurney Taylor; secretary, Dr. Ward Brinton, and directors, Mrs. Charles F. Jenks, Mrs. Lawrence Lewis, Jr., Miss Henrietta Ely, Francis R. Cope, Jr., and Drs. Henry Robert Munsy Landis and James M. Anders.

Care of Scholars' Teeth.—Twenty thousand toothbrushes and forty gross of tooth powder will be distributed free to public school children by Dr. P. B. McCullough and his assistants at City Hall at the free dental clinic. Dentists of the city in practice more than twenty years raised the fund for this purpose. These will be given each child when his mouth has been put in proper condition at the clinic. At one school, where examinations of the mouths of 110 children were made, only 6 sets of perfect teeth were found. Dr. Joseph S. Neff, director of public health and charities, feels it necessary to have salaried dentists for the work in the free clinic as it is not possible to depend on the corps of volunteer dentists, which in the beginning numbered 200 but now has dwindled to scarcely half a dozen. Councils will be called on to support the clinic.

GENERAL NEWS

Dominion Physicians to Meet.—The forty-fourth annual meeting of the Canada Medical Association will be held in Montreal, June 7, 8 and 9. Sir James Barr, Liverpool, England, will deliver the address in medicine and Dr. Alexander Primrose, Toronto, the address in surgery. Dr. William J. Mayo, Rochester, Minn., will read a paper on "Gallstone Disease," and Dr. Casey A. Wood of Chicago is on the program in the ophthalmologic section.

Change Date of Climatological Meet.—It is announced that the scientific sessions of the twenty-eighth annual meeting of the American Climatological Society will be held in Montreal, Que., June 13-14. The plans contemplate a stay at Saranac Lake, N. Y., June 12, with a visit to the Adirondack Cottage Sanatorium and the New York Sanatorium at Raybrook. The preliminary program includes twenty-two titles, notable among which are the papers by Dr. James M. Anders, Philadelphia, on "The Climatic and Hygienic Influences of Forest Growth;" by Dr. Richard Cole Newton, Montclair, N. J., on "Some of the Laws for the Treatment of Consumption Laid Down by Sydenham and His Successors;" by Dr. David R. Wyman, Wallingford, Conn., on "The Economic Value of Sanatorium Treatment of Pulmonary Tuberculosis;" by Edward Osgood Otis, Boston, on "Blood-Pressure and Physical Exertion;" and by Henry Robert Munsy Landis, Philadelphia, on "After History of Patients Treated in the Phipps Institute."

Medical Sociologists to Meet.—The American Society of Medical Sociology will hold a meeting in the Academy of Medicine, New York City, May 12. The papers of the evening are "What Animal Experimentation or So-Called Vivisection has Accomplished for Mankind," by Dr. James P. Warbasse, Brooklyn; "The Control of Prostitution and of Venereal Disease in This Country and Abroad," by Dr. Frederick Bierhoff, New York City; and "The Question of Abortion from a Social and Ethical Point of View," by Dr. William Josephus Robinson, New York City. The discussion will be opened by Dr. Abraham Jacobi.

Recent Deaths in the Profession Abroad.—In addition to those mentioned by our correspondents, the following deaths have been reported: J. F. Hempel, surgeon-general of the Danish army, died March 8, aged 63.——P. Patron, a leading physician of Peru and on the editorial staff of the *Cronica Medica* of Lima, Peru.——E. E. del Arca, dean of the medical department of the University of Buenos Aires, where he was professor of materia medica, collaborator on the Codex Argentina, member of the state legislature and president of the school board, died March 21, aged 57.

LONDON LETTER

(From Our Regular Correspondent)

London, April 22, 1911.

Notification of Consumption at Hospitals

The local government board has issued an order embodying further regulations for the notification of cases of pulmonary tuberculosis occurring among the in-patients or out-patients of hospitals and other institutions for the treatment of the sick, which are supported wholly or partially otherwise than by the contributions of the patients. This regulation carries the notification of tuberculosis another step forward. Previously notification was necessary only in the infirmaries provided by the state.

Shellfish and Disease

The dangerous conditions from sewage contamination under which oysters are liable to be collected, fattened or stored, have for several years attracted the attention of health officers. Since 1898, outbreaks of typhoid fever have been traced to this source in England. To cockles similarly contaminated in Belfast Lough the prevalence of typhoid in Belfast is attributed. Dr. Bulstrode, inspector of the local government board, has issued a very important report on "Shellfish Other Than Oysters in Relation to Disease" in which he reviews the evidence connecting the consumption of mollusks with typhoid fever and gastro-enteritis. It has been fairly easy to establish the connection in cases in which a large number of persons partake of these and become ill soon afterward. But in addition to these cases, local investigations made by health officers during the last twenty years have shown that shellfish probably have caused, and are still causing, a serious number of sporadic cases of typhoid fever which contribute largely to maintain its endemic prevalence. Thus in the urban district of Ormesby, Dr. Johnson, the health officer, has shown that of the patients suffering from typhoid fever, 25 per cent. had eaten shellfish from a contaminated source a short time before, while among a large proportion of the population only 7.3 per cent had eaten shellfish during the whole of the summer. Dr. Bulstrode declares that means must be devised whereby shellfish for human consumption shall no longer be laid down, stored, washed in, or gathered from, positions liable to sewage contamination. The places from which shellfish are procured, cleansed or prepared for market must be periodically inspected. In the meantime, until proper regulations can be enforced, persons who desire to avoid typhoid should consume shellfish only after they have been cooked at the boiling point for at least five minutes.

PARIS LETTER

(From Our Regular Correspondent)

Paris, April 21, 1911.

First Aid To Injured Workmen

The president of the Conseil général de la Seine has just received a petition from Dr. Rémy, *agrégé* professor of the Faculté de médecine de Paris, requesting authority to open courses in the professional schools of the city of Paris to train working men to give first aid to injured comrades until the physician should arrive. The Syndicat des Médecins de la Seine has passed a resolution protesting energetically against this petition on the ground that the first dressing should be made with as perfect asepsis and antisepsis as possible.

Responsibility of the Author of a Work of Popular Medicine for a Typographical Error

A cabinet-maker, coming home drunk and realizing his own condition, asked his wife to send to the nearest druggist for something to sober him. His wife consulted a book which she had, the "Médecin du peuple," and found a formula calling for 100 gm. of water, 15 gm. of peppermint water and 15 gm. of ammonia water, to be taken in two or three doses; this she carefully copied and sent to the druggist. The cabinet-maker took the potion and died. The book in question, written by Dr. Georges Migot under the pseudonym of "Dr. Davaud," was first published at Ghent and republished at Paris. In the reprint a serious error crept into the formula copied by the cabinet-maker's wife. The amount of ammonia was given as 15 grams instead of 15 drops. Dr. Migot and the pharmacist were both prosecuted for manslaughter, the one for not having verified his formulas and the other for delivering a remedy without a prescription and without fulfilling the conditions demanded by law. The cabinet-maker's widow, as civil party to the suit, demanded for herself and her two children $8,000 (40,000 francs) damages. Dr. Migot was condemned to three months in prison and the pharmacist to one month. The widow was awarded damages of $200 (1,000 francs) and an annual payment of $60 (300 francs) for herself and $40 (200 francs) a year for each of her two children until they shall be 18 years old. Two-thirds of this pecuniary recompense is to be at the charge of the author of the book in question and one-third is to be charged to the pharmacist.

Large Families in Indigence

An official investigation has been made throughout France into the number of large and indigent families, in order to ascertain the probable cost of monthly relief to such families. It appears that the number of families having from four to ten children, aged less than 13, is 369,739, the total number of children being 1,712,322. Among these 237,802, having 1,078,855 children, are in a condition of permanent indigence.

Protest Against a Play Derogatory to the Medical Profession

A play is now being presented in a Paris theater containing violent attacks against the medical profession. The physicians in this theater have resigned. The Conseil général des Sociétés médicales d'arrondissement de Paris has just unanimously voted its congratulations to the physicians of the theater for not countenancing such outrages by their presence. They call on all their colleagues to follow this example, relying on the professional dignity and solidarity to insure that no physician shall take the place of the physicians who have resigned.

The Signs Displayed by Midwives

Some midwives place at their doors signs announcing that they treat diseases of women. On the complaint of the Syndicat des Médecins de la Seine the prefecture of police has ordered these midwives to suppress all such notices. It is to be hoped that the administration will extend this measure to masseurs and healers of all kinds, and will thereby put an end to an abuse which has lasted too long to the injury of the medical profession.

Has a Physician the Right to Inject a Non-Authorized Serum?

The courts have recently had to pass on the case of a physician, Dr. Lorot of Paris, who was prosecuted for manufacturing and selling without authorization an antituberculous serum called "toxyline." This serum was, according to M. Guignard, director of the Ecole supérieure de pharmacie de Paris, composed of three other serums; one an antityphoid serum, one an antistreptococcus serum coming from the Pasteur Institute of Paris, and the other, the name of which Dr. Lorot was unwilling to give, coming from the Pasteur Institute of Lille. Dr. Lorot's defense was that he did not sell toxyline to patients or to physicians, but that the injections that he made were comprised in the treatment that he gave. Dr. Lorot was acquitted and the court of appeals confirmed the decision of the lower court on the ground that, while the law prohibits the sale of serums not authorized by the government, the injection in the course of treatment, even though it is a serum, should not be considered as a sale.

Treatment of Obesity

On April 11 Professor Albert Robin read before the Académie de médecine a paper on the treatment of obesity by a strictly hygienic and dietetic régime without the administration of any drug and without any quantitative restriction of food or drink. This treatment consists essentially in having the patient take fractioned meals. The first meal in the morning consists of cold meat or fish and hot water with a little tea, and is followed by half an hour's walk. At half past ten the patient eats one or two eggs, drinks hot water and then takes a walk of half an hour. This meal is intended especially to blunt the edge of hunger for the midday meal, for which the patient takes cold meat, a vegetable salad, fresh vegetables and fruit, hot water as before, and then a walk for half an hour. At 5 o'clock he takes a light luncheon with hot drink and a walk afterward; in the evening, a meal like that at noon, but with hot meat, and another walk. This frequency of meals is intended to suppress the sensation of hunger as the ingestion of aromatic hot water restrains thirst, while greatly limiting the quantity of liquid ingested. The treatment is almost always successful. In any case, one may ascertain the outcome very early by measuring the total urine of the two or three days preceding the treatment and, likewise, the urine of the days following. If the treatment is to be successful, an increase of the quantity of urine is immediately observed.

Dr. Maurice de Fleury remarked that Professor Robin was right to reject the starvation treatments, which are always harmful to obese subjects who are affected with tuberculosis.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, April 13, 1911.

Personal

Dr. Königshöfer, professor of ophthalmology at the veterinary college at Stuttgart, died a few days ago at the age of 59. He secured his preparation for his specialty as assistant to Professor Michel at Erlangen, and has published many investigations in the field of ophthalmology. Moreover, he was active in a scientific and practical way in social hygiene, and did good service as an advocate of the interests of the medical profession, especially for the introduction of the free choice of physicians. It was largely due to him that free choice of physicians in hospitals was introduced in the state hospitals for the railroad and post-office employees of the kingdom of Würtemberg. Königshöfer belonged to the business committee of the German medical league (*Deutscher Aerztevereinsbund*).

Alcohol and Misdemeanors in the Army and Navy

Some interesting facts are given in a recently published article regarding the connection between alcohol and misdemeanors in the German army and navy. According to this article, the offenses committed from drunkenness against military discipline in the army have ranged from 9.6 to 12.5 per cent. of the total misdemeanors in the last ten years, and in the navy from 11.1 to 22.3 per cent. This does not include slight infractions of military order; of the most serious offenses against military discipline (actual attack, mutiny, insubordination) about three-fourths are due to the clouding of the consciousness by alcohol. The geographical distribution of the offenders is also interesting. In the eastern provinces alcohol is used under its purest forms as whisky, while in the west more wine is drunk, although in the Rhine provinces absinthe is also used, and in Bavaria beer has the preference. The abuse of alcoholic drinks is regulated by the habits of the people of the various divisions of the country.

Repeal of the Tuberculin Test for Imported Cattle

Serious objections have repeatedly been made by German agriculturists against the tuberculin test prescribed to protect the German cattle industry against the importation of foreign diseased animals. On the one hand animals have been rejected on account of their violent reaction to the tuberculin test, which when slaughtered showed only slight tuberculous lesions, conditions that did not necessitate the exclusion of the cattle. On the other hand, it has been established that foreign cattlemen have learned to immunize their cattle to tuberculin, so that animals have passed the test and their importation has been allowed, when later they have proved to be tuberculous. The federal council (*Bundesrat*) has taken cognizance of these complaints, and at its last sitting adopted new regulations for the quarantine of animals imported by way of the sea. The tuberculin test is to be abolished after July 1 and replaced by a clinical investigation.

Hotel Proprietors and the International Hygiene Exposition

At a meeting of the directors of the association for the promotion of commerce between Dresden and foreign places, the chairman stated that the Dresden branch of the international association of hotel proprietors had decided not to impair the invitation of Dresden to foreign cities by a special advance in prices during the international exposition of hygiene, but to support this hospitality by accommodating service. It would be very satisfactory if the Dresden exposition could be made notable above other similar affairs by the carrying out of this resolution.

Municipal Institutions for the Care of Sufferers from Pulmonary and Laryngeal Affections

The Berlin authorities have decided to establish a station for the care of pulmonary and laryngeal patients at Buch, a sewage-farm district belonging to Berlin, where already important municipal institutions are situated, particularly the pesthouse, an insane asylum and a hospital for pulmonary patients. The building of a pavilion is contemplated providing for 500 beds, with a possible enlargement to 1,000 beds.

Education of Blind and Deaf and Dumb Children

The upper house of parliament at one of its recent sessions adopted a law for regulating the schooling of blind and deaf and dumb children. In special institutions for the blind, attendance at school is to begin at the sixth year and that for the dumb at the seventh year. For children who are retarded in their development the school attendance is to be postponed three years. As for children who are both blind and deaf and dumb, a special resolution was passed declaring that legal regulations for school attendance were not applicable to such children at present. The government was requested, however, to give particular attention to the schooling and education of such children. As soon as methods for the training of these children have been successfully developed and it is possible to assemble blind, deaf and dumb children in an institution, regulations for their attendance at school are to be established.

BUDAPEST LETTER

(From Our Occasional Correspondent)

Budapest, April 10, 1911.

Wood Alcohol Poisoning

Dr. Felletar, director of the Public Analytical Office, in a lecture at a recent meeting of the local medical society, gave some object-lessons on the recent multiple poisoning by wood spirit. He said that in the majority of these cases the persons affected have been of alcoholic habits and have taken to the drinking of the methyl spirit either from a liking for it or as a substitute for unattainable ethyl alcohol. The fatal dose in these cases was half an ounce. One of the patients was poisoned by inhalation of the vapor, and another by absorption through the skin. Both of these were workmen in a distillery. This shows, said Felletar, that in manufactories where large quantities of methyl spirit are used it is necessary to provide for an extra supply of fresh air to the workers. In the cases quoted by Felletar the most constant symptoms of the poisoning were mild intoxication followed by severe headache, gastric pain, retching, dilatation of the pupils and partial or complete blindness. In the most serious cases this sequence was followed by dyspnea, coma with stertorous breathing and death. The toxic amblyopia, continued the lecturer, is of all these symptoms the most constant and important, since even when recovery takes place, atrophy of the optic nerve is likely to follow the neuritis, and permanent blindness is the result. The immediate cause of death in fatal cases is not clear, though respiratory paralysis sometimes precedes circulatory failure. It is thought that the toxicity of the drug may be greatly increased by the production of formates in the body by the decomposition of the methyl alcohol; and formates have actually been discovered in two of these patients. Whatever be the exact pathology of the condition, there is no doubt that the intense toxicity of methyl alcohol calls for extreme caution in its use. It is, moreover, the duty of the profession to see that the public are properly instructed on the point.

Syphilis in Physicians

Dr. Sellei, dermatologist to the Teleia Hospital, recently urged the necessity of counting syphilis as an "occupation disease" of physicians. He has had as patients seven medical men suffering from the disease (Professor Blaschko had twelve). The primary lesion occurred in nearly every case on the hands, and was received in the course of gynecologic examination or operation. In some of the cases the cause of infection was the accidental wounding of the finger with an instrument, but in most it occurred through some unnoticed scratch or minute lesion. In one case, indeed, infection was definitely traced to the performance of an autopsy on a syphilitic. The primary lesion in Sellei's cases was usually very small and by no means painful, and presented some difficulty in diagnosis; in particular, it had to be distinguished from herpes, from anatomic tubercle, and from chancroid. Sellei advises against excessive use of the scrubbing-brush in preparation for gynecologic examinations, as he thinks it is responsible for many slight traumata about the fingers. He advises, too, the more frequent use of gloves in general gynecologic work.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, April 18, 1911.

Military Facilities for Medical Students

The proposed new regulations of the compulsory military service contain some provisions dealing with medical students. Hitherto the rule for the service in the ranks has been three years for the bulk of the population. Medical and certain other students, as well as a few groups of persons having a university education, had the privilege of serving but one year with the colors. The medical students had to serve half a year with the ranks before graduating, and then after having obtained their regular M.D. diploma, they had to serve another six months in the army hospitals. The new plan requires a two-year service with the colors for the bulk, one year for persons with college education, and for medical students three months' service with the rank and file, while the other nine months will be spent in hospitals of the army. Furthermore, the three months of actual army service can be taken during the annual summer vacations, July-September, so that the medical student will no more lose half a year of his curriculum as hitherto. The nine months of hospital service are to be divided up chiefly between surgical and medical wards. Specialist tendencies to be favored whenever present. The military service will, in future, be postponable up till the twenty-eighth year of the student or doctor. After serving his term the doctor will hold the rank of "Oberarzt" (a little less than captain), in his private position. The facilities for medical students have been made necessary by the lack of first-class men in the Army Medical Corps, for nearly all doctors who are capable to do so, leave the army on account of the unsatisfactory position they have to expect there.

Medical Men and the Dissolution of Parliament

The unexpected dissolution of the Austrian parliament has just now come as a welcome period of preparation for the medical profession. The defunct parliament had no more than nine medical members out of a total of 425. They were quite inadequate to cope with the problems confronting our profession just now. The social legislation was framed in such a way that the doctor would have been the sufferer. In previous Vienna letters (The Journal, Dec. 11 and 25, 1909, pp. 2019, 2171; May 7, 1910, p. 1558) it was explained that a grand action was deliberated in parliament to secure free medical aid for a large proportion of the population by means of compulsory membership in a Krankenkasse or friendly society. While the profession wanted a certain income limit of 2,400-3,000 kronen ($500-$600) on the part of the insured members, so that persons earning more than that yearly income should not become members of this Krankenkasse, parliament had framed a bill in which no income limit was fixed and all wage-earners could have availed themselves of the opportunity of cheap medical help. This bill spelled ruin to many a private practitioner. By the dissolution of parliament the bill is done away with for a time. Meanwhile the profession has started an energetic action to bring in as many doctors as possible into the new house to be elected in June. All local branches have been asked to nominate medical candidates and the cooperation of influential political parties will be sought after in this endeavor. Especially in certain country districts and in some towns, where the doctor plays a prominent part among the population, there is reason to expect the return of the practitioner into the house. Then, of course, when the bill is again introduced, amendments more suitable to the needs of the profession will be likely to be carried. All the more, as also a new "epidemic act," a "medical regulation act" and a "health officers' act" are under consideration. There will be plenty of opportunity for useful work for would-be members of parliament who are doctors too.

Marriages

JAMES S. ARCHIBALD, M.D., Nokomis, Ill., to Miss Julia Le Hurt of St. Louis, at Edwardsville, Ill., April 15.

EDWIN A. GRIFFIN, M.D., Manhattan, New York City, to Miss Ethel Frances Gibson of Brooklyn, April 12.

CHARLES LEWIS FRANKLIN, M.D., Des Moines, Ia., to Miss Maria Helen Richardson of Chicago, April 26.

CARL O. BERNHARDI, M.D., Jr., Rock Island, Ill., to Miss Edith Snyder of Terre Haute, Ind., April 19.

CHARLES WHEELER WALKER, M.D., to Miss Mary Elizabeth Gaffney, both of Rye, N. Y., April 16.

HUGH PAYNE GREELEY, M.D., Boston, to Miss Floretta Elmore of Milwaukee, Wis., April 20.

CLARENCE E. BRINCKERHOFF, M.D., to Miss Mildred Kathryn Cooney, both of Chicago, April 27.

HEBER BUTTS, M.D., U. S. Navy, to Miss Maude M. Grimes of Washington, D. C., April 17.

EARL B. BUSH, M.D., Ames, Ia., to Miss Edna Evans of Worthington, Minn., April 15.

HENRY M. FINE, M.D., to Mrs. Margaret Havermale, both of Oakland, Cal., April 18.

HENRY B. DECHERD, M.D., to Miss Fannie Dealey, both of Dallas, Tex., April 12.

Deaths

Manning Simons, M.D. Medical College of the State of South Carolina, Charleston, 1868; a member of the American Medical Association; one of the most prominent and successful of the older generation of South Carolina physicians and surgeons; died at his home in Charleston, April 18, from heart disease, aged 64. Almost from the time of his graduation he was a member of the teaching staff of his alma mater as professor of abdominal surgery and gynecology. He was for many years surgeon to the Roper Hospital and the St. Francis Xavier Infirmary. He was formerly president of the South Carolina Medical Association, the Tri-State Medical Association of Virginia and the Carolinas, and the Southern Surgical and Gynecological Association; and was a member of the American Association of Physicians and Gynecologists and International Association of Railway Surgeons. Dr. Simons was local surgeon to the Southern Railway and the Charleston Consolidated Railway and Lighting Company.

Herman Knapp, M.D., an eminent ophthalmologist of New York City; died in Mamaroneck, N. Y., May 1, aged 79. He was born in Dauborn, Prussia, received his degree in medicine at the University of Giessen in 1854, and made studies in ophthalmology in Germany, France and England, thereafter. He became professor of ophthalmology in Heidelberg University in 1864 and continued in that position for four years, when he came to America. He settled in New York City in 1868 and founded the New York Ophthalmic and Aural Institute a year later. In 1869 he also established the *Archives of Ophthalmology and Otology*, of which he was editor for many years. From 1882 to 1888 he was professor of ophthalmology in the New York University Medical College. From 1888 to 1902 he occupied the same chair in the College of Physicians and Surgeons, New York City and, in the latter year, was made emeritus professor.

John Bedford Shober, M.D. University of Pennsylvania, Philadelphia, 1885; died in the German Hospital, Philadelphia, April 27, after an operation for the removal of gall-stones, aged 51. He was a member of the American Medical Association, The College of Physicians of Philadelphia, and the Philadelphia Medical Club; gynecologist to the American Hospital for Diseases of the Stomach and the Howard and Gynecean hospitals, Philadelphia, and to the Bar Harbor (Maine) Medical and Surgical Hospital. Dr. Shober practiced in Philadelphia excepting from June to October of each year, when he resided in Bar Harbor, Me.

Alexander H. Crosby (license, Lewis County, N. Y., 1862); a member of the American Medical Association; and a practitioner of Lewis County for nearly fifty years; in 1875, a member of the state legislature; and for several years a member of the county pension examining board; died at his home in Lowville, March 2, from carcinoma of the liver, aged 74. Lewis County Medical Society, at a special meeting, held March 3, adopted appropriate resolutions regarding the death of Dr. Crosby.

William Green, M.D. Jefferson Medical College, 1858; a member of the Medical and Chirurgical Faculty of Maryland; and chief surgeon in the Confederate Army on the staff of Gen. Robert E. Lee during the Civil War; at one time president of the Baltimore Clinical Society; for several years professor of materia medica and therapeutics in Washington University, Baltimore; died at his home in that city, April 16, from heart disease, aged 74.

Thomas Peter Scully, M.D. Albany (N. Y.) Medical College, 1885; a member of the Medical Society of the State of New York; formerly president of the Oneida County Medical Society; a member of the staff of the Rome Hospital; a member of the Rome board of health, and formerly of the board of health of Cohoes; died at his home, April 19, from pneumonia, aged 41.

Arthur Case Fitch, M.D. George Washington University, Washington, D. C., 1903; formerly night medical officer of the Government Hospital for the Insane, Washington; but for the last two years a resident of Porto Bello, Brazil; and quarantine officer of the Maderra-Manore Railway Company; died suddenly in Porto Bello April 6, from cerebral meningitis, aged 34.

J. Wiltsie Knapp, M.D. Albany (N. Y.) Medical College, 1872; a member of the Medical Society of the State of New York; for six years demonstrator of anatomy in the Syracuse University; for two terms coroner of Onondaga County, and later president of the local board of pension examiners; died at his home in West End, Syracuse, April 14, from nephritis, aged 58.

Edwin Farnham, M.D. University of Pennsylvania, Philadelphia, 1869; a member of the Massachusetts Medical Society, the American Public Health Association, and the Massachusetts Association of Boards of Health; medical officer of the board of health of Cambridge from 1889 to 1909; died at his home in that city, April 16, from arteriosclerosis, aged 68.

Addison Parker Macomber, M.D. New York University, New York City, 1853; formerly president of the Iowa State Homeopathic Medical Society; died at his home in Atlantic, Iowa, April 16, aged 79. The physicians of the city passed resolutions expressing their regret at the loss of a faithful associate, and a man of wise counsel and judgment.

William Harper Barrett, M.D. Washington University, St. Louis, 1864; a member of the Missouri State Medical Association, and a charter member of the Cass County Medical Society; major and brigade surgeon of volunteers during the Civil War; died at his home in Harrisonville, April 17, from arteriosclerosis, aged 73.

John Rayner Richardson, M.D. McGill University, Montreal, 1865; a surgeon in the federal service during the Civil War; a member of the American Medical Association; surgeon to the Lakeside Hospital and to the Sons of St. George; died at his home in Chicago, April 27, from cerebral hemorrhage, aged 67.

Katherine Bohm Leidich, M.D. Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1899; a member of the Harrisburg Academy of Medicine; died in the Harrisburg Hospital, March 24, from acute nephritis following an operation for appendicitis, aged 44.

Elbert S. Miller, Jr., M.D. University of Pennsylvania, Philadelphia, 1869; a member of the Tennessee State Medical Association; for about twenty years president of the Johnson City Board of Education; said to have been the oldest practitioner of that city; died at his home, April 12, aged 68.

Charles Stuart Elder, M.D. Rush Medical College, 1863; a veteran of the Civil War; a member of the school board; for two terms alderman, and in 1872, mayor of Chenoa, Ill.; died at the home of his daughter in that city, April 12, from senile debility, aged 75.

Charles C. Phillips, M.D. St. Louis College of Physicians and Surgeons, 1895; formerly a member of the American Medical Association; a member of the Idaho State Medical Association; died at his home in Lewiston, March 29, aged 42.

John Andrew Steele, M.D. Berkshire Medical College, Pittsfield, Mass., 1866; Homeopathic Medical College of Pennsylvania, Philadelphia, 1858; died at the home of his daughter in Minneapolis, April 14, from cholelithiasis, aged 74.

Eugene J. Chassagne, M.D. University of Paris, France, 1877; Jefferson Medical College, 1893; for eight years a member of the staff of Jefferson Hospital, Philadelphia; died at his home in Washington, D. C., April 7, from paresis.

John Fairfield Moulton, M.D. Long Island College Hospital Brooklyn, 1874; a member of the Maine Medical Association; died at his home in Limington, April 14, from peritonitis, following an operation for appendicitis, aged 61.

Samuel Michael Jenks, M.D. Rush Medical College, 1872; of Madison, S.D.; a veteran of the Civil War; and a member of the first board of trustees of the State Normal School; died in Madison, April 14, from pneumonia, aged 65.

Abraham R. Groves, M.D. Kentucky School of Medicine, 1858; University of Louisville, 1867; for a time dean of the staff of the Louisville City Hospital; died at his home in Louisville, April 17, from nephritis, aged 75.

Isaac Frederick Ingersoll, M.D. Queen's University, Kingston, Ont., 1863; medical officer in the United States Army during 1864 and 1865; died at his home in Regina, Sask., Nov. 10, 1910, from senile debility, aged 71.

Robert Louis Hill, M.D. Rush Medical College, 1864; Hahnemann Medical College, Chicago, 1867; consulting physician to the Fabiola Hospital, Oakland, Cal.; died at his home in that city, April 6, from prostatitis, aged 69.

Gabriel A. D. Brown, M.D. Jefferson Medical College, 1868; a member of the Kentucky State Medical Association; of Harrisonville; died at the home of his son in Louisville, April 15, from carcinoma of the stomach, aged 64.

Herbert Benjamin Hutton, M.D. Trinity Medical College, Toronto, 1902; a member of the Welland County (Ont.) Medical Association; died suddenly at his home in Humberstone, Ont., April 8, from myocarditis, aged 33.

Harry Ross Wallace, M.D. College of Physicians and Surgeons, Chicago, 1891; of Chicago; a member of the American Medical Association; died in St. Joseph's Hospital, Alton, Ill., April 12, from diabetes, aged 54.

Samuel D. Smoke, M.D. Medical College of the State of South Carolina, Charleston, 1859; died at his home in Fort Ogden, Fla., Nov. 13, 1910, from chronic nephritis, complicated by aortic stenosis, aged 73.

George Bayneham, M.D. Manitoba Medical College, Winnipeg, 1908; of Brookdale, Man.; died in the General Hospital, Portage la Prairie, April 10, from injuries received in a runaway accident a week before.

Carl Ludwig Larson, M.D. College of Physicians and Surgeons, Chicago, 1902; formerly a member of the American Medical Association; a practitioner of Butte, Mont.; died in Chicago, April 7, aged 39.

Harriett E. Magee Fox, M.D. Hahnemann Medical College, Chicago, 1871; prominent for many years in philanthropic work in Chicago; died at her home in that city, April 21, from diabetes, aged 68.

Robert C. H. Rademaker, M.D. Hospital College of Medicine, Louisville, 1903; clinical assistant in diseases of children in his alma mater; died in Washington, D. C., April 5, from gastritis, aged 37.

Charles James Joseph Lynch, M.D. Bellevue Hospital Medical College, 1890; died at his home in New York City, April 19, from an overdose of paraldehyd, taken as a sleeping potion, aged 41.

William P. Woodcock, M.D. University Medical College, New York City, 1850; for more than thirty years a practitioner of Spencer, Ia.; died at his home, April 6, from senile debility, aged 84.

Hamil Cato Timmons, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1882; a Confederate veteran, and one of the oldest practitioners of Atlanta; died at his home April 15.

Leander Dixon Rand, M.D. University of Vermont, Burlington, 1888; a member of the Maine Medical Association; died at his home in Fairfield, April 8, from cerebral hemorrhage, aged 48.

James Richard Shapard, M.D. University of Nashville, Tenn., 1874; a member of the Tennessee State Medical Association; died at his home in Nashville, April 18, from meningitis, aged 56.

William Ezekiel Webb, M.D. Jefferson Medical College, 1887; physician to the Chester County (Pa.) Insane Hospital; died at his home in Unionville, April 13, from pneumonia, aged 47.

Percy Ray McLean, M.D. University Medical College of Kansas City, Mo., 1908; of Hunters, Wash.; died in the Monrovia (Cal.) Sanatorium, April 14, from tuberculosis, aged 23.

William R. Endris, M.D. Missouri Medical College, St. Louis, 1882; formerly of St. Louis; a member of the Illinois State Medical Society; died at his home in Brussels, March 31.

Alexander Davis, M.D. Baltimore Medical College, 1892 (license, Tex., Sixth Judicial Board, 1898); died at his home in West, Tex., Oct. 28, 1910, from endocarditis, aged 72.

William H. Hyten (license, Ind., 1897); for sixty years a practitioner of Montgomery County; died at his home in Parkersburg, April 14, from senile debility, aged 87.

John Botsford Sabin, M.D. University of Buffalo, N. Y., 1867; for several years coroner of Kootenai County, Ida.; died at his home in Coeur d'Alene, April 19, aged 65.

Frederick T. Robinson, M.D. College of Physicians and Surgeons, Baltimore, 1893; of Brooklyn, Md.; died in the Johns Hopkins Hospital, Baltimore, April 10, aged 43.

William Carson Wilson (license, Arkansas, 1903); for forty-three years a practitioner of Arkansas; died at his home in Yellville, April 5, from influenza, aged 74.

Arthur Dorval, M.D. Victoria University, Coburg, Ont., 1874; died at his home in Montreal, Que., Dec. 26, 1910, from peritonitis due to a gastric ulcer, aged 58.

Eli Wilson, M.D. Barnes Medical College, St. Louis, 1896; of Puxico, Mo.; died in Hot Springs, Ark., Oct. 15, 1910, from valvular heart disease, aged 43.

Philip A. Austin, M.D. Cleveland University of Medicine and Surgery, 1866; died at his home in Muscatine, Ia., February 13, from pneumonia, aged 76.

Isaac Smith Vreeland, M.D. New York University, New York City, 1876; died at his home in Stony Point, N. Y., April 8, from pneumonia, aged 59.

John J. McElwee, M.D. Washington University, St. Louis, 1863; formerly of Chain of Rocks, Mo.; died at his home in Houston, Tex., April 21, aged 76.

Addison Snively, M.D. University of Wooster, Cleveland, O., 1880; a veteran of the Civil War; died at his home in Cleveland, April 9, aged 66.

Vernon Tuford Chew, M.D. Washington University, St. Louis, 1860; died at his home in Rosenberg, Tex., March 26, from influenza, aged 74.

Thomas J. Solt, M.D. Central College of Physicians and Surgeons, Indianapolis, 1884; died at his home in Mountaintop, Pa., April 3, aged 54.

Joshua M. Fackler, M.D. Pulte Medical College, Cincinnati, 1878; died at his home in Plymouth, O., April 11, from pneumonia, aged 73.

Harry Lloyd Madden, M.D. Medico-Chirurgical College of Philadelphia, 1909; died recently at his home in Mount Alton, Pa., aged 29.

Wesley Jones Burns, M.D. Trinity Medical College, Toronto, 1876; died recently at his home in Caledonia, Ont., aged 57.

R. H. Dyke, M.D. Missouri Medical College, St. Louis, 1878; died at his home in Bellflower, Mo., April 19, aged 57.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

[Contribution from the Chemical Laboratory of the American Medical Association]

TABLETS OF BISMUTH, OPIUM AND PHENOL

W. A. Puckner and W. S. Hilpert

Nearly three years ago[1], a contribution from the Chemical Laboratory appeared in The Journal, dealing with the composition of tablets of bismuth, opium and phenol (carbolic acid). It was there shown that these tablets contained only from 72.65 per cent. down to as low as 12.66 per cent. of the amount of phenol stated on the label.

After publishing these results in detail and waiting a little more than two years, we again examined similar tablets of the same makes, bought in the open market. The results of this second examination were published in The Journal, Dec. 17, 1910. Instead of finding that conditions were better, that the firms had made an effort to market tablets that were true to the label, this examination showed that the phenol-content of the tablets now ranged from 63.53 per cent. down to 12.27 per cent. of the amount claimed.

This second examination also showed that the manufacturers were not sufficiently concerned with the quality of their product to call in any stock which they must have known was untruthfully labeled. In view of this fact, it was thought worth while both to learn the ages of the various tablets that were purchased at the time of, and for the purpose of, making the second examination and also to examine the most recently made tablets put out by the same firms. Accordingly, the identifying marks on each package of tablets examined and which formed the basis of the report of the second paper, were sent to the respective firms with inquiries as to the date of the manufacture of these various specimens. At the same time orders were placed in each case for the firm's most recently made product.

The result of this work is arranged in tabulated form as follows: Table 1 gives the age of the specimens that were used for the second examination; Table 2 compares the composition of tablets as found in the first and second examinations with the composition found in the present (third) examination.

TABLE 1.—AGE OF TABLETS IN SECOND EXAMINATION

Manufacturer	Date of Manufacture	Date of Purchase	Age When Purchased
Hance Bros. & White...	Sept. 17, 1910.	Oct. 27, '10	1 month.
W. S. Merrell Chem. Co.	July 11, 1906..	Oct. 27, '10	4 years.
H. K. Mulford Co.....	Nov. 22, 1909..	Sept. 15, '10	1 year.
Parke, Davis & Co.....	Sept., 1910....	Sept. 15, '10	Under 1 mo.
Sharp & Dohme.......	June 1, 1906...	Sept. 15, '10	4 years.
F. Stearns & Co... ...	August, 1906..	Oct. 27, '10	4 years.
Truax, Greene & Co....	Prior to 1906..	Sept. 16, '10	4-5 years.
H. K. Wampole & Co...	Aug. or Dec.,'08	Oct. 27, '10	2 years.
W. R. Warner & Co....	Aug. 3, 1906...	Nov. 11, '10	4 years.

Strange as it may seem, some of the manufacturers wrote as if they had not known of the former publication of the laboratory's examination.

Wm. R. Warner & Co. writes that it is going to engage the services of a commercial chemist to examine the stock and that it will not offer the tablets for sale until assurance is had that the tablets are true to claim. While it may cause some surprise to learn that this firm must engage outside talent to learn the quality of its own wares, the decision to discontinue the sale of its practically worthless stock is to be commended.

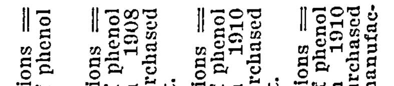
TABLE 2.—COMPOSITION OF TABLETS IN FIRST, SECOND AND THIRD EXAMINATIONS

Phenol Found Expressed as Per Cent. of Amount Claimed

	Specimen Purchased on Market		Specimen Obtained from Manufacturer
Manufacturer	1908	1910	1910
Hance Bros. & White......	21.89	34.19	34.49
W. S. Merrell Chem. Co....	48.89	57.59	68.43
H. K. Mulford Co.........	52.34	63.53	83.18
Parke, Davis & Co........	(a) 70.23 (b) 47.02	46.86	46.83
Sharp & Dohme.........	(a) 72.65 (b) 34.63	53.39	38.14
F. Stearns & Co..........	26.55	23.17	24.86
Truax, Greene & Co.......	13.69	28.09	28.24
H. K. Wampole & Co.....	(a) 46.14 (b) 39.31	53.75	112.64
W. R. Warner & Co.......	12.66	12.27	41.47

The tablets which were obtained direct from H. K. Wampole & Co. and which were found to contain an amount of phenol in excess of the amount claimed were quite different in appearance when received from any previously examined in that they were damp and had a strong odor of phenol. About two months later, the tablets of this batch which remained in the bottle presented a most remarkable appearance in that they were covered with an efflorescence of crystals of phenol. Should these tablets be dispensed on a physician's prescription the possibilities are that the pure phenol would come in direct contact with the tongue and throat and produce painful burns. Of course these tablets are quite unfit for use.

Another important matter brought out is the fact that ready-made mixtures, such as these tablets, may be four or five years old before they leave the hands of the wholesaler. While, in this case, the efficiency of the remedy is not influenced by age, it is a well-known fact that many drugs rapidly deteriorate. If tablets such as these are likely to be four or five years old before they leave the wholesale house, how old will they be before they are dispensed on a physician's prescription? This question is a pertinent one and the answer—which the laboratory's work furnishes—should do much to discourage the prescribing of such ready-made mixtures.



The above presents the findings of the Association chemists in a graphic form and shows the great discrepancies between the claims made for the tablets and the actual facts. The solid black portions represent the phenol-content. In the first column is given the phenol content claimed by the manufacturer; in the second column is shown the actual phenol-content found in the tablets purchased in 1908; the third column represents the phenol-content as found in the tablets purchased on the market in 1910, while the fourth column shows the phenol-content of the tablets purchased in 1910 direct from the manufacturer. Note the excess of phenol in the tablets sent by H. K. Wampole & Co. in filling the order for a bottle of the most recently made products.

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[1] The Journal A. M. A., July 25, 1908, p. 330.

SANATOGEN—ITS FOOD VALUE

To the Editor:—Will you kindly tell me whether or not Sanatogen has any food value?

Arch Dixon, Jr., M.D., El Paso, Texas.

Answer.—Sanatogen is said to contain 95 per cent. of casein so that 30 gm. (1 ounce) of this preparation would contain approximately 28.5 gm. of protein, which would yield 117 calories. This is the equivalent in round numbers of one-third of a pint of milk or one and one-half eggs. The same amount of energy would be given by an equal weight of starch or by one and one-fifth as much of flour or other cereals. To present the matter even more graphically, it may be said that $1 worth (4 ounces) of Sanatogen yields approximately no more energy than 6 cents' worth of good milk or 1 cent's worth of ordinary wheat flour. Sanatogen, therefore, like most preparations of this class, while a food, is a ruinously expensive one. The absurdly exaggerated claims regarding it were discussed in The Journal, Feb. 19, 1910, as follows:

"According to the manufacturers, this patent medicine—or food—is composed of 95 per cent. casein and 5 per cent. sodium glycerophosphate. The preparation is advertised very extensively both to physicians and to the laity, on both sides of the Atlantic. In Great Britain it is a 'tonic food;' in this country a 'food tonic;' whether this is a distinction with or without a difference, it is hard to say. The public is told that Sanatogen is a 'muscle builder and a nerve and brain food;' the medical profession, that 'it should not be regarded as a food preparation in the ordinary sense of the term and it is not offered as such to the medical profession. . . .' Many of the claims made for this combination of milk-curd and glycerophosphates are exaggerated and absurd. The following are taken from advertisements, appearing both in this country and abroad:

"The Re-Creator of Lost Health."
"Sanatogen is . . . a rebuilding food."
". . . revitalizes the overworked nervous system."
"Specific nerve tonic action."
"Most reliable and scientific of all nutrients."
". . . *in certain diseases* it exerts a *specific action* which renders it a valuable adjunct to other curative measures."

"In one of the form letters sent to physicians, the makers of Sanatogen opine that 'you have likely noticed' an article that appeared 'in the May issue' of a certain medical journal. The ingenuousness of this intimation becomes apparent when it is known that a few days previous to receiving the letters, the physicians had been the recipients of pamphlet reprints of said article—'With Author's Compliments.'

"That milk curd has a food value no one will deny; that the glycerophosphates of soda have a place in medicine may be admitted; but that a combination of these two products should become at once the summum bonum of medicinal foods is a proposition that will not appeal to the thinking physician."

Correspondence

Fatal Accident from Toy Pistol Means of Securing Sane Fourth Ordinance

To the Editor:—On April 11, a child, aged 7, was playing with another boy, aged 13, and in some manner a toy blank cartridge pistol, which had been loaded with a 22-caliber cartridge, with the bullet whittled down to allow it to enter the bore of the pistol, was discharged, the bullet entering the younger child's back, between the lower ribs and the crest of the ilium. In spite of everything that could be done, even to opening the abdomen in the hope of tracing the bullet, which had been followed from the rear as far as the spine, the child died about thirty-six hours after the accident.

It was found that the toy pistol causing the child's death had been purchased for the celebration of last Fourth of July.

Attorneys, physicians, and business men, together with the press, at once took up the matter of a prohibitive ordinance insuring a "sane Fourth" and April 17 the desired ordinance was passed by the Enid city commission, and the prohibition made to include all forms of explosive fireworks. Some slight objection was made by one or two members of the commission who wanted an exception made in favor of small firecrackers and other so-called harmless fireworks, but several physicians armed with the statistics summarized in The Journal, Sept. 3, 1910, turned the tide; the opposition was withdrawn and the ordinance was passed as drawn.

The firms in the city handling fireworks had agreed to cancel their orders in case an ordinance was passed immediately, and to their fair-mindedness in the matter the result was due in no small measure.

The physicians of Enid have been trying to get such an ordinance passed for two or three years, but were always met by more or less indifference, and by the statement that it would be unjust to the dealers to prohibit the sale of stock already purchased. It took this needless sacrifice of an innocent young life to bring the community and the city government to their senses in the matter, but once aroused they have moved in the matter with a promptness truly commendable, and we hope in the future to have a Fourth truly "sane."

P. A. Smith, M.D., Enid, Okla.

The Round-Ligament Operation

To the Editor:—I believe Dr. J. Clarence Webster and Dr. J. M. Baldy (see The Journal, April 29, 1911, p. 1280) are both behind the times in respect to priority of the operation above named. I saw Dr. Frank Andrews do this operation at Mercy Hospital in 1898 many times, drawing the round ligaments through the broad ligaments and uniting them back of the fundus. Dr. Andrews said that occasionally it might be advantageous to put a small suture from ligaments to fundus when the round ligaments were greatly relaxed.

William J. Thomson, Portage, Wis.

Method of Staining Bacteria

To the Editor:—My attention has been called to the fact that I have not mentioned the staining of preparations for the standardizing of vaccine by the method described in my article on "The Simplified Method of Staining Bacteria," which appeared in The Journal, April 22, 1911, p. 1189.

I have used this method of staining for that purpose all along with the greatest satisfaction in place of Leishman's or Wright's blood-stain recommended by most observers.

Leon S. Medalia, Boston.

Association News

No Genito-Urinary Section Program at Los Angeles

To the Editor:—At a meeting of the executive committee of the Section on Genito-Urinary Diseases of the American Medical Association, held April 20, it was unanimously resolved to hold the first meeting of the Section in 1912.

The committee finds that proper representation cannot be secured at so late a date in June this year.

H. H. Young, Secretary, Baltimore.
William T. Belfield, Chairman, Chicago.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PUBLIC DOCUMENTS NOT FREE

To the Editor:—You recently mentioned the Public Health Bulletins. Every letter that I have received in reference thereto has indicated that the writer had received the impression from your publication that the bulletins were sent free.

If you can see your way clear to publish a few lines removing that erroneous impression, which causes some disappointment to those who address me, and involves considerable correspondence on the part of my clerks, I shall be obliged.

August Donath, Superintendent of Documents,
Washington, D. C.

Answer.—The language in the editorial referred to, April 8, 1911, page 1039, can hardly be held responsible for the inference that these bulletins are sent free. It is far more likely that this inference comes from the well-known fact that government publications are, to such a large extent, furnished free. The average reader may be excused if he thinks this custom is general, in view of the thousands of tons of speeches and political documents which our representatives and senators send without charge on slight provocation to any of their constituents who may be influenced. For instance, a recent despatch from Washington stated that one senator had shipped two car-loads of envelopes, addressed and bearing his frank, to the largest city in his state, where they were to be filled with copies of his speeches and distributed, gratis, and postage-free to the voters of the state. This enormous mass of literature (?) was distributed for political reasons, and so cost the individual nothing, but will be paid for by the tax-payer. The public health pamphlets on the other hand, were intended only to save life and reduce sickness, and so could not, of course, be distributed free to the tax-payer. A price-list of these documents can be secured from the Superintendent of Documents. Meanwhile political speeches and garden-seeds can be had for the asking, as usual.

QUININ AND UREA ANESTHESIA

To the Editor:—Please give me the technic and other information pertaining to quinin and urea hydrochlorid as a local anesthetic.

E. D. Collett, Mangum, Okla.

Answer.—The technic of anesthesia by quinin and urea hydrochlorid is the same as that by cocain. The injections are used in the strength of from ¼ to 1 per cent. The ¼ per cent. solution is said to be free from the risk of producing fibrous indurations, which sometimes occur with the stronger solution. For application to mucous membranes solutions varying in strength from 10 to 20 per cent. should be used.

The following articles on this subject have been published or abstracted in The Journal.

Thibault, H.: A New Local Anesthetic, Jour. Arkansas Med. Soc., Sept., 1907; abstr. in The Journal, Nov. 16, 1907, p. 1719.

Brown, E. J.: Painless Tonsillectomy and Adenectomy with Quinin Anesthesia, The Journal, Aug. 8, 1908, p. 496.

Herztler, A. E., Brewster, R. B., and Rogers, F. B.: Quinin and Urea Hydrochlorid as a Local Anesthetic, The Journal, Oct. 23, 1909, p. 1393.

Gaudier, M.: Quinin and Urea Hydrochlorid, Presse Médicale, July 2, 1910; abstr. in The Journal, Aug. 6, 1910, p. 538.

Thibault, H.: Local Anesthesia with Quinin and Urea Hydrochlorid, The Journal, Apl. 23, 1910, p. 1375.

Quinin and Urea as Local Anesthetics, The Journal, May 14, 1910, p. 1628.

Green, W. O.: Local Anesthesia with Quinin and Urea Hydrochlorid, The Journal, June 11, 1910, p. 1940.

Quinin and Urea Hydrochlorid, N. N. R. Supplement, The Journal, Apl. 15, 1911, p. 53.

See also Graham, H. F.: Quinin and Urea Hydrochlorid as a Local Anesthetic, Long Island Medical Journal, June, 1910.

PIPERAZIN, LYCETOL AND LITHIA IN NEPHROLITHIASIS

To the Editor:—Please advise me as to the value of piperazin and lycetol in nephrolithiasis. Are they of enough value to warrant paying such a fancy price for them? Please advise me if there is anything I can do beyond advising a strict diet, plenty of water to drink, and possibly lithia.

C. E. D., M.D., *Flora, Ill.*

Answer.—Piperazin, lycetol, lithium carbonate and other alkalies are more or less efficient solvents of uric acid and urate calculi in the test-tube; careful experimental work, however, as well as theoretical considerations, demonstrate that the chemical conditions are unfavorable for their solvent action in the tissues and in the urinary passages. Critical clinical observers also agree that these drugs are not reliable uric acid solvents. The most rational and effective, as well as the most economical, treatment of nephrolithiasis consists in the dilution of the urine by drinking plenty of water, prevention of excessive acidity by the administration of alkalies, and limitation of the uric acid progeners in the food by avoidance of meats. It is doubtful whether piperazin, lycetol or lithium salts would add to the efficiency of the treatment. The question of uric acid solvents will probably be discussed in The Journal in greater detail in the near future.

ALCOHOL IN THE TREATMENT OF POISONING BY THE PORTUGUESE MAN-OF-WAR

To the Editor:—It may help Dr. R. S. Lowry, of Fort Lauderdale, Florida [The Journal, April 22, 1911, p. 1213] to know of my experience, during the past seven years at Palm Beach, with the poison of the Portuguese man-of-war. Among the numerous bathers at the above resort, I have had several cases of more or less severe poisoning by this jellyfish, and the only prompt relief that I have obtained has been by bathing the place stung with alcohol 95 per cent. This gives immediate relief, and the continual use of alcohol and water, equal parts, relieves permanently. My theory has been that the alcohol dissolves and neutralizes the poison, as it does in ivy poison. I have tried nearly every external application, but found nothing so satisfactory as the alcohol.

William E. Bullard, Larchmont, N. Y.

The Public Service

Medical Department U. S. Army

Changes for the week ended April 29, 1911.

Glennan, James D., lt.-col., left Army Gen. Hosp., San Francisco, on 30 days' leave of absence.

Kerr, Robert W., lieut., relieved from duty as surg., transport *Sheridan*, on arrival at San Francisco, about Oct. 12, 1911, and will report to adjunct general of Army for further orders.

Bayly, Rozier C., lieut., relieved from duty as trans. surg. *Logan*, on arrival at San Francisco, about Nov. 12, 1911, and will report to the adjutant general of the Army for further orders.

Suggs, Frank, M.R.C., on withdrawal of troops from Ft. Egbert, Alaska, will proceed to Seattle, Wash., for further orders.

Lincoln, H. F., M.R.C., when his services are no longer needed on the transport *Crook* will proceed to Ft. Apache, Ariz., for duty.

Ruddy, Wm. P. J., M.R.C., recently appointed, will proceed to Ft. Myer, Va., for duty at that station.

Hewitt, John M., M.R.C., assignment to U. S. A. T. *Dix*, revoked.

Fisher, H. C., major, left Columbus Bks., Ohio, on ten days' leave.

Deshon, Geo. D., major, orders directing him to proceed to the Philippine Islands, for duty, on July 5, 1911, revoked.

Hewitt, John M., M.R.C., retd. to station U. S. Mil. Prison, Ft. Leavenworth, Kan., from en route to Seattle, Wash., for duty on transport *Dix*.

Griffis, F. C., M.R.C., to Ft. Robinson, Neb., for temporary duty.

Wolven, F. Homer, D.S., ordered to proceed to several posts in Alaska, for duty.

Knox, Howard A., lieut., resignation accepted by the President.

Richardson, William H., captain, relieved from duty at Army Gen. Hosp., San Francisco, and ordered to Ft. Miley, Cal., for duty.

Boak, S. Davis, D.S., relieved from duty at Army General Hospital, San Francisco, and ordered to West Point, N. Y., relieving William H. Chambers, D.S., who will proceed to the Army General Hospital, San Francisco, for duty.

Ferguson, James B., 1st lieut., relieved from active service under the provisions of an Act of Congress March 4, 1911.

Freeman, Chas. E., captain, relieved from duty at Ft. Miley, Cal., and ordered to the Army General Hospital, San Francisco, for duty.

Each of the following-named officers is relieved from duty at the station designated after his name, to take effect at such time as will enable him to comply with this order, and will proceed at the proper time to San Francisco and take the transport to sail from that place on or about Sept. 5, 1911, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general Philippines division, for assignment to duty: 1st Lt. John T. Aydelotte, M.C., Ft. Sam Houston, Tex.; 1st Lt. Harry R. Beery, M.C., Ft. Benjamin Harrison, Ind.; 1st Lt. Joseph Casper, M.C., Ft. Du Pont, Del.; 1st Lt. George W. Cook, M.C., Ft. Douglas, Utah; 1st Lt. Arthur O. Davis, M.C., Ft. Oglethorpe, Ga.; 1st Lt. Joseph W. Love, M.R.C., Fort Banks, Mass.; 1st Lt. Herbert I. Harris, M.R.C., Ft. Snelling, Minn.

Each of the following-named officers is relieved from duty at the station designated after his name, to take effect at such time as will enable him to comply with this order, and will proceed at the proper time to San Francisco and take the transport to sail from that place on or about Oct. 5, 1911, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines division, for assignment to duty: Lt.-Col. Guy L. Edie, M.C., attending surgeon, Washington, District of Columbia: Maj. Wm. E. Vose, M.C., Jackson Bks., La.; 1st Lt. Taylor E. Darby, M.C., Ft. McPherson, Ga.; 1st Lt. Ralph G. de Voe, M.C., Ft. Worden, Wash.; 1st Lt. James S. Fox, M.C., Ft. Sam Houston, Tex.; 1st Lt. Glenn I. Jones, M.C., Ft. McDowell, Cal.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended April 26, 1911:

Stoner, J. B., surgeon, directed to proceed to Pittsburg, Pa., and assume command of the service.

Wertenbaker, C. P., surgeon, directed to proceed to Fortress Monroe, Va., and inspect unserviceable property on hulk *Jamestown*.

Schereschewsky, J. W., P. A. surgeon, relieved from duty at Baltimore and directed to proceed to Washington, D. C., and report to Director of the Hygienic Laboratory for duty.

Grimm, R. M., asst.-surgeon, relieved from duty in the Hygienic Laboratory and directed to proceed to Savannah, Ga., and assume temporary charge of the service.

Clarke, F. M., acting asst.-surgeon, granted twenty days' leave of absence from May 6, 1911.

Goldthwaite, Henry, acting asst.-surgeon, granted thirty days' leave of absence from April 1, 1911.

Board of medical officers convened to meet at San Francisco, Cal., April 24, 1911, for the examination of Assistant Surgeon A. J. Lanza, to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail amended as follows: Surgeon Rupert Blue, chairman; Passed Assistant Surgeon F. E. Trotter; Passed Assistant Surgeon M. W. Glover, recorder.

Medical Economics

This Department Embodies the Subjects of Postgraduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

GOVERNOR O'NEAL VETOES THE ALABAMA OPTOMETRY BILL

The optometry bill recently passed by the Alabama legislature, through a misapprehension as to its intent, has been vetoed by the governor, Hon. Emmet O'Neal. His veto message should be read by all interested in preventing the passage of these bills. Governor O'Neal said:

To the Senate: I herewith return Senate Bill No. 151, without my approval.

This bill proposes legally to organize or establish in this state a new occupation or profession, to be known as optometry, based on the science of optics as applied to the eye.

As I understand it, an optometrist is in reality an optician, and an optician has always been considered a tradesman, and he is not required or expected to have a scientific medical knowledge required by law of the oculist—whose profession authorizes him to medically treat the eye.

Inasmuch as the field of the optometrist constitutes a part of the broad field of the science of medicine, a part already occupied by regularly educated and licensed physicians, known as oculists, it becomes a question worthy of investigation and study as to the wisdom of permitting territory belonging legitimately to one profession to be invaded by persons who are not, and do not claim to be, equipped for membership in that profession. As all know, the eye is a very delicate and important organ of the body. Consequently, to deal with it intelligently there is required a thorough knowledge of not only its optics, but its anatomy, physiology and diseases. While optometrists propose to deal only with the optics of the eye, to draw the line that separates the optics of the organ from its diseases must require a thorough knowledge of everything that appertains to the eye; that is, of its optics, anatomy, physiology and its diseases.

A man who is familiar with only one part of the subject would necessarily often be unable to determine where his domain begins. Just as a physician who understands only the anatomy, physiology and diseases of the eye would not be in a position to deal with its optics, so a person who only understands its optics would not know where its diseases begin. That is, the entire subject seems to be so closely correlated as to render it practically impossible to draw a line of demarcation between its parts, and assign one part to persons who do not claim to study or understand the whole. If this be true, it becomes a serious question as to the good policy of by law authorizing persons to occupy a field, the limits of which they cannot definitely define. A class of men, known as opticians, has long existed. The duties of these consist in grinding glasses and filling the prescriptions of oculists. This relation corresponds with that sustained by druggists and physicians, and it would seem to be the wisest policy to insist that these relations be maintained. To permit an optician to usurp the rights of an oculist, who is at the same time an educated physician, would be quite as irregular as to permit a druggist to usurp the rights of a physician in the treatment of diseases of patients.

I am informed that bills similar to this one have been introduced in many legislatures, inspired perhaps by some large manufacturing establishments for the manufacture and sale of glasses. It is easy to see that conferring a high-sounding title on men engaged in a trade would tend to exaggerate their importance and skill in the minds of the public.

In vetoing this bill I am not depriving opticians or persons dealing in glasses of any rights that legitimately belong to them.

If such a law is enacted it would, in my opinion, be an infringement on the already existing laws regulating the practice of medicine in this state. I therefore recommend that any applicant for the practice of optometry be required to undergo the same examination as that of any specialist who proposes to practice medicine in his selected specialty.

I am informed by physicians of the highest authority and by men who by life-long study have thoroughly acquainted themselves with the eye and its diseases, that the legislation sought in this bill is extreme, and I am also informed by the State Board of Health that only a thoroughly equipped and licensed physician should be permitted to enjoy the privileges intended to be conferred on optometrists by this bill.

It will be noticed that it is intended by this bill that the opticians of the state shall have exclusive control of the officers provided for in the bill, and I am informed that if there is a department created by legislation akin to that sought by this bill it should be placed under the control of the State Board of Health, or of regularly licensed and educated physicians.

A bill similar to this one was presented in 1907 to Governor Hughes of New York, and was vetoed by him on this very ground.

[After quoting from the veto messages of Governor Deneen[1] of Illinois and Governor Harmon of Ohio,[2] Governor O'Neal concludes:]

The eye is too delicate and valuable an organ to be made the subject of any experiment whatsoever; and if there is to be such a science as that of optometry I fear that it is yet too near to its inception to be given the power contemplated in this bill, which is returned to you without my approval.

Emmet O'Neal, Governor.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR

Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Tenth Month—Second Weekly Meeting

Causes of Sudden Death (Continued)

Death by Asphyxia

Hanging: Death due to obstruction of admission of air, to pressure on blood-vessels, to injury to nerves or spinal cord. Phenomena of hanging; three stages (Tidy). Postmortem appearances, external and internal. Suspension before and after death. Homicidal hanging.

Strangulation: Manual (immediate) or by ligature (mediate). Garroting. Phenomena of strangulation; four stages (Draper). Post-mortem appearances, external and internal. Accidental, suicidal and homicidal strangulation.

Suffocation: Methods. Accidental, suicidal and homicidal suffocation. Post-mortem appearances.

Drowning: Post-mortem appearances, external and internal. Manner of death. Accidental, suicidal and homicidal drowning. Determination of interval between death and recovery of body.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Regular, Little Rock, May 9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, May 9. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, May 9. Sec., Dr. G. A. Hinton, Hot Springs.

Florida: Regular, Tallahassee, May 8-9. Sec., Dr. J. D. Fernandez, Jacksonville.

Kentucky: The Armory, Louisville, May 31. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: Regular, New Orleans, May 18-20. Sec., Dr. A. B. Brown, 108 Baronne St.

Massachusetts: State House, Boston, May 9-11. Sec., Dr. Edwin B. Harvey, Room 159 State House.

Mississippi: Jackson, May 9. Sec., Dr. S. H. McLean.

Nebraska: State House, Senate Chamber, Lincoln, May 24. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

New York: May 23-26. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

Wisconsin: Milwaukee, May 24-26. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Utah Secures an Amended Practice Act

Revisions to the Utah medical practice act have been secured providing: (a) that the attorney general shall be ex officio a member of the board of medical examiners; (b) that the board shall consist of nine members so appointed that

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1. The Journal A. M. A., June 1, 1907, p. 1871.
2. The Journal A. M. A., June 25, 1910, p. 2135.

the terms of three members expire each year; (c) that the minimum number of hours constituting the medical course required of all applicants be 3,500 hours, no specific total being fixed for the various subjects of the medical curriculum; (d) that the minimum requirement of preliminary education shall be a certificate from a first grade high school which shall have included at least two units work in Latin or German, *but that after 1916, each applicant in addition must furnish* evidence of at least one year's work in a college of liberal arts; (e) that the fee for examination be $25.00; (f) that authority be given to the board to revoke the license of any practitioner guilty of unprofessional conduct after proof of such conduct has been secured; (g) that the board be empowered to establish reciprocal relations with other states; and (h) for a definition of the practice of medicine.

"Unprofessional conduct" is defined to mean: (1) offering or attempting to procure or aid or abet in procuring a criminal abortion; (2) the procuring or aiding or abetting in procuring a criminal abortion; (3) the obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured; (4) the wilful betraying of a professional secret; (5) any advertising naming diseases of or in relation to the diagnosis or treatment of, or medicine for any abnormal or diseased condition of, or pertaining to the organs of generation; (6) all advertising of medicine or of any means whereby the monthly periods of women can be regulated or the menses reestablished if suppressed; (7) conviction of any offense involving moral turpitude; (8) habitual intemperance or gross immorality; (9) lending his name to be used as a physician or surgeon by another person who is not a physician or surgeon; (10) street advertising, soliciting or other public peddling or selling of medical or surgical remedies or appliances in person or by proxy; (11) prescribing any intoxicating liquor to be used as a beverage; (12) prescribing morphin or cocain or other narcotic with intent that the same shall be used otherwise than medicinally or with intent to evade any law in relation to the sale, use or disposition of such drugs; (13) wilful violation of the law in regard to the registration of births and deaths and the reporting of infectious diseases to the State Board of Health.

The definition of the practice of medicine is as follows: Any person shall be regarded as practicing medicine within the meaning of this title, who shall diagnose, treat, operate on, or prescribe or advise for, any physical or mental ailment or any abnormal, mental or physical condition of another, after having received or with the intent to receive therefor, either directly or indirectly, any fee, gift, compensation or other pecuniary benefit, reward or consideration; or who shall hold himself out by means of signs, cards, advertisements or otherwise as a physician or surgeon.

Connecticut Regular, Homeopathic and Eclectic March Reports

Dr. Charles A. Tuttle, secretary of the Connecticut State Medical Examining Board, reports the written examination held at New Haven, March 14-15, 1911. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 24 of whom 17 passed and 7 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale Medical School	(1910)	75.5, 76.9, 81.5, 82.1, 82.9, 85.8, 88.6.
Northwestern University Medical School	(1897)	79.4
Johns Hopkins University Medical School	(1908)	77.7
Tufts College Medical School	(1905)	78.3
Long Island College Hospital	(1909)	77.9
Jefferson Medical College	(1909)	83.2
University of Virginia	(1908) (1909)	84.7; 77.2
University of Toronto, Ontario	(1909)	81.9
McGill University, Quebec	(1899)	76.4
University of Rome, Italy	(1898)	78.8
FAILED		
Maryland Medical College	(1910)	65.8, 66.4
Baltimore Medical College	(1907)* (1909)	67 68.1
College of Phys. and Surgs., Boston	(1907) (1910)	49.4; 57.7

* No percentage given.

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, March 14, 1911. Only one candidate, a graduate of Boston University, 1909, was examined and he passed with a grade of 93 per cent.

Dr. T. S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports that at the meeting held at New Haven, March 14, 1911, one candidate, a graduate of the Eclectic Medical Institute, 1883, was licensed through reciprocity with New York.

Washington January Report

Dr. F. P. Witter, secretary of the Board of Medical Examiners of the State of Washington, reports the written examination held at Spokane, January 3-6, 1911. The number of subjects examined in was 11; total number of questions asked, 132; percentage required to pass, 75. The examination included the clinical examination of patients in hospital wards. The total number of candidates examined was 75, of whom 51 passed, including 1 osteopath, and 24 failed. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Gross Medical College	(1901)	1
Bennett Medical College, Chicago	(1896)	1
American Medical Missionary College	(1910)	1
College of Physicians and Surgeons, Chicago (1883) (1908) (2, 1909)	(1910)	5
Rush Medical College (1887) (1900) (1906) (2, 1908)	(2, 1910)	7
State University of Iowa, College of Medicine	(1910)	1
Louisville Medical College	(1901)	1
Johns Hopkins University	(1910)	1
University of Maryland	(1910)	1
University of Michigan, Department of Medicine and Surgery (1903) (1904)	(1910)	3
Harvard University Medical School (1893)	(1898)	2
Saginaw Valley Medical College	(1898)	1
University of Minnesota, College of Medicine (1896) (1902) (1905) (1907)	(1908)	5
Missouri Medical College	(1889)	1
Creighton Medical College (1909)	(1910)	2
New York Homeopathic Med. Coll. and Hosp.	(1910)	1
New York University Medical College	(1893)	1
Albany Medical College	(1900)	1
Jefferson Medical College (1906)	(1910)	2
University of Pennsylvania (1878) (1895) (1896) (1899)	(1907)	5
Tennessee Medical College	(1906)	1
University of Vermont	*(1889)*	1
Trinity Medical College, Ontario	(1903)	1
McGill University, Quebec	(1910)	1
University of Toronto, Ontario	(1908)	1
University of Christiania, Norway	(1908)	1
University of Munich, Germany	(1901)	1
FAILED		
Rush Medical College (1886) (1899)	(1903)	3
College of Physicians and Surgeons, Chicago	(1910)	1
Northwestern University Medical School	(1910)	1
Bennett Medical College	(1896)	1
State University of Iowa, College of Medicine	(1908)	1
University of Louisville	(1900)	1
Drake University, College of Medicine	(1897)	1
College of Physicians and Surgeons, Baltimore	(1909)	1
Tufts College Medical School	(1906)	1
University of Michigan, Department of Medicine and Surgery (1883)	(1879)	2
Barnes Medical College	(1907)	1
Missouri Medical College	(1895)	1
Bellevue Hospital Medical College	(1898)	1
University of Buffalo	(1910)	1
University Medical College, Kansas City	(1898)	1
University of Pennsylvania	(1909)	1
University of Nashville	(1902)	1
Tennessee Medical College	(1900)	1
University of Vermont	(1899)	1
University of Toronto	(1908)	1
London School of Medicine for Women	(1900)	1

Wyoming March Report

Dr. J. B. Tyrrell, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Cheyenne, March 7-9, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, and not less than 60 in any one branch. The total number of candidates examined was 2, both of whom passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Hering Medical College	(1895)	86.6
Creighton Medical College	(1910)	80.8

LICENSED THROUGH RECIPROCITY

College	Year. Grad.	Reciprocity with
University of Colorado	(1910)	Colorado
Denver and Gross College of Medicine	(1910)	Colorado
Chicago Homeopathic Medical College	(1903)	Illinois
Keokuk Medical College, Coll. of Phys. and Surgs.	(1904)	Iowa
Northwestern University Medical School	(1910)	Illinois

Book Notices

MODERN TREATMENT. The Management of Disease with Medicinal and Non-Medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia. Assisted by H. R. M. Landis, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania). In Two Volumes. Vols. I and II. Cloth. Price, $6 net. Pp. 1830, with 193 illustrations. Philadelphia: Lea & Febiger (1910).

This is a composite work; the selection of authors for the various chapters, however, has been judiciously made and the result as a whole is satisfactory. A short introduction by H. A. Hare discusses the general subject of therapeutics and points out its dependence on and close relations to clinical medicine. H. C. Wood, Jr., in a chapter on "Modern Pharmacology," undertakes the difficult task of presenting the conclusions regarding the therapeutic value and use of drugs drawn from the investigation of chemical structure and from animal experimentation. A classification is made from a therapeutic standpoint and the subject is treated in such detail as to insure its marked practical value.

Ambrose Hunsberger, in a chapter on "Combination of Drugs," gives some valuable hints as to the prescription blank, the prevention of repetition, etc. The various forms in which remedies are to be administered are exhaustively described. In connection with this article as well as elsewhere in the work we regret to see a certain carelessness in regard to the Latin of the prescriptions. Errors in the grammatical endings are frequent, while in places a disregard of the official titles and pharmaceutic spelling is noticeable. Thus we find "Adipis lani hydros," "Acetphenetidinæ," "01. theobromæ," "Adipis benzoinatis," etc.

Tuberculin as a therapeutic and diagnostic agent is discussed by F. M. Pottenger, who gives a high value to the tuberculin therapy, but regards it as only one of the agents to be employed. The tuberculin tests are fully discussed; the method of von Pirquet is regarded by the author as of value in adults if interpreted in the right way. We fail to find, however, any specific directions for its correct interpretation. The vaccine treatment of typhoid fever is not considered by D. Riesman as a decided improvement on the older methods. The discussion on this subject is brought fully up to date. The use of horse serum for the hemorrhage of typhoid is suggested. Excellent detailed directions for the administration of specific serum in the treatment of epidemic cerebrospinal meningitis are given by C. H. Dunn.

"The Treatment of Pneumonia" by F. S. Meara exhibits the influence of experimental pharmacology in an important field of practice. Alcohol, in his opinion, has been much used in this disease without justification; it is never a true stimulant. Strychnin, he thinks, has been much overrated and nitroglycerin is absolutely contra-indicated. The method of thoracentesis is described with great detail. Tuberculosis receives 70 pages from the pen of H. M. Landis. Drug therapy receives attention, but aside from a few recommendations for cough and other symptoms, little credit is given to medicine. Even for cough the teaching of self-control to the patient is emphasized.

Syphilis is well treated by William Gottheil. Much space is given to prophylaxis, but the author is skeptical as to the value of moral advice, good as it may be. The treatment with mercury is described with great detail. Salvarsan is noticed, but the author gives merely his own experience, which seems to have been rather unfavorable to the new remedy. The dysenteries are comprehensively treated by J. L. Rhoads.

The article on "Diseases of the Circulatory Organs," by James McKenzie, possesses unusual merit, not only for the expert handling of a subject in which the advances of modern therapeutics have been so momentous, but also for the light thrown on the principles of therapeutics. The tendency of patients and even of physicians to give the credit of the improvement resulting from suggestion to remedies which are in themselves inefficient is especially noted. Such a tendency is often responsible for the continuance of ineffective remedies in cases in which imminent danger demands the prompt application of energetic remedies in sufficient doses. Again, the reader is warned against the tendency to rely too exclusively on the results of laboratory experiments. For instance, although experiment shows digitalis to be a vasoconstrictor, the author's experience shows that therapeutic doses in man do not raise blood-pressure, but often lower it.

"Diseases of the Blood," by J. C. DaCosta, Jr., receives adequate and satisfactory treatment. The work of Joseph Sailer on "Diseases of the Stomach and Intestines" is excellent. The same is true of the treatment of the other internal organs. The technic of local examination and treatment of the female genital organs is clearly described by B. M. Anspach, who contributes one of the most valuable chapters in the book.

Space will not permit specific reference to all the articles in the excellent work, but so far as we have been able to examine them, they seem well adapted to the needs of the practicing physician. The volumes are well illustrated where the subject permits it. Of special interest at the present time are the colored plates showing the erythema of pellagra

THE MODERN MATERIA MEDICA. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes and Incompatibles of All Additions to the Newer Materia Medica that Are Likely to be Called for on Prescriptions, Together with the Name and Address of the Manufacturer or Proprietor, and in the Case of Foreign Articles, of the American Agent. Second Edition. Cloth. Price, $1.25. Pp. 432. New York: The Druggists Circular, 1911.

This book lists, alphabetically, practically every medicinal product which has been introduced into medicine during the last decade. The sources from which the information has been compiled are chiefly the circulars of the manufacturers. Consequently, the work cannot have the authoritative value that it would have had if it had been subjected to rigid censorship by the editor. The statements of the manufacturers have not, however, been accepted at their face value in all cases. In a considerable number the reports of analyses made in the laboratory of the American Medical Association and, to a lesser extent, those made in the laboratory of the Pharmaceutical Institute of the University of Berlin, have been carefully abstracted by the editor and the results compared with the claims of the manufacturer. In this way the plain truth has been told about many nostrums. While in most cases the therapeutic applications of the medicaments are indicated, the book makes no pretense of being an authority in therapeutics. The amount of information given, as indicated in the subtitle, makes the work an encyclopedia which should prove useful alike to prescriber and dispenser. Physicians, however, who are not excessively confident of their own ability and good judgment in such matters might find it more satisfactory to limit their prescribing of proprietaries to such as are included in New and Nonofficial Remedies.

THE WORK OF THE DIGESTIVE GLANDS. Lectures by Prof. I. P. Pavlov, Director of the [illegible] ie Imperial Institute of Experimental [illegible] V. H. Thompson, Sc.D., M.D., F.R.C.S. ([illegible] the Institutes of Medicine, Trinity Colle [illegible] Edition. Cloth. Price, $3 net. Pp. 266, with 45 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

Those who read the first edition of Pavlov's work will find little difference in the main part of the book between that edition and the present one. The translator has added something here and there to bring the lectures up to date, but it is a striking testimony to the value and thoroughness of Pavlov's work that, notwithstanding the activity in this field of research during the eight years which elapsed between the appearance of the two English editions, so few new facts were discovered to add to his description of the secretory function of the stomach. The motor function, on the other hand, is more completely understood, as a result especially of *x*-ray investigations, and in order to present these facts, the translator has added two new chapters drawn largely from American and English sources. In order to conform to the style of the rest of the book these chapters are also presented in lecture form. One other chapter has been largely rewritten.

The readers of the first edition will agree that the character of the facts presented and the charming style in which they are portrayed gave the book much of the fascination of a romance. Both old and new readers will enjoy the perusal of the present edition in which one of the most important and practical sections in the whole field of physiology is so clearly exhibited.

Medicolegal

Adjudications and Prior and Subsequent Conditions as Evidence of Mental Capacity

The Supreme Court of Indiana had, in Taylor vs. Taylor (93 N. E. R. 9), a case where a woman 63 years of age was stricken with apoplexy, July 12, 1899, made a will July 3, 1900, was declared of unsound mind and incapable of managing her estate on a complaint filed January 6, 1906, had a second stroke of apoplexy in July, 1906, and died in January 1907. Unsoundness of mind at the time the will was executed was claimed, and the petition, answer of the clerk and judgment of the court of 1906 were offered in evidence, and excluded.

In holding that there was no error in such exclusion, the Supreme Court says that it cannot perceive that the evidence was so clearly competent or so material, that, if given, it could have had any effect or influence in determining the question of the mental capacity of the woman when the will was executed, when there was direct evidence to the point.

It cannot be doubted that much latitude in point of time, both before and after the transaction under inquiry, is allowable in determining the question of soundness or unsoundness of mind. The reason for the rule is apparent. The consistency or inconsistency of acts or declarations, differences in conduct towards family, relatives, and friends, and differences in habits of life at different times, if they exist, are relevant to, and sometimes highly indicative of, conditions of mind, and therefore competent for the purpose of determining that question, when they are of such character as to denote the mental condition. In some states the statute authorizes the inquiry in lunacy to be extended to a time anterior to the inquiry itself; but the Indiana statute does not authorize a retroactive inquiry to be made, or status fixed, though this court recognizes the prima facie status fixed by the adjudication, and holds that, even though a will is executed after an adjudication of unsoundness, mental capacity may be shown.

Whilst large latitude should be allowed in all such proceedings, and whilst there is no agreed limit of time within which the prior or subsequent condition is to be considered, the circumstances of each case in the very nature of things ought to control, and the discretion of the trial judge, though reviewable for abuse, ought to have weight. The question in such cases is necessarily one of relevancy. The inquiry must be sufficiently near in point of time to aid the jury in determining the mental condition at the time of the execution of the will.

The court knows as a matter of common knowledge that sane people become of unsound mind; therefore there must be some point of time when they thus become. And it knows that persons of unsound mind may have intervals of such lucidity of mind that they are competent to execute wills; hence the fact that a witness has testified that one is of sound mind at one time is only remotely, if at all, affected by the fact of the same person five and one-half years later filing a petition asserting such person to be of unsound mind, and incapable of managing his or her own estate, at that time. The adjudication is only prima facie evidence of mental incapacity.

Liability for "Waste" in Use of Property for Small-Pox Hospital

The Supreme Judicial Court of Massachusetts holds, in Delano vs. Smith and others (92 N. E. R. 500), that the use of property for a small-pox hospital may, under certain circumstances, constitute what in law is known as "waste." The latter it defines as an unreasonable or improper use, abuse, mismanagement, or omission of duty touching real estate, by one rightfully in possession, which results in its substantial injury—a violation of an obligation to treat the premises in such manner that no harm be done to them, but that the estate may revert to those having an underlying interest undeteriorated by any wilful or negligent act.

The plaintiff in this case was a holder of a mortgage on property which the defendants, acting as members of the board of health of the city of Everett, leased from the owner, after he had given the mortgage, "to be used as a contagious disease hospital." The plaintiff claimed damages, in the nature of waste. The jury fixed his damages at $1,800, but the trial judge ruled that there could be no recovery, which the court holds was not necessarily so.

It is the commonly accepted view, the court says, that small-pox is a contagious disease, spread through the instrumentality of germs, which, although invisible to the naked eye, are perniciously active and capable of causing loathsome and often fatal sickness. In Commonwealth vs. Pear, 183 Mass. 242, is a statement of the judicial notice which the court will take of the horrors of small-pox. From the agreed facts the jury would have been warranted in finding that this building was filled in every nook and crevice with the microscopic germs of this dreaded disease. This might have been found to constitute a material change in the qualities and condition of the house with reference to the purposes for which it was intended to be used, such as to constitute a definite injury.

Inoculation with germs of glanders was held to be a "bodily injury" in H. P. Hood & Sons (Corp.) vs. Maryland Casualty Co., 206 Mass. 223. Sowing the seeds of noxious weeds was restrained as waste in Pratt vs. Brett, 2 Madd. 62. Impregnation of a building with the indiscernible but vital germs of a dangerous malady is closely analogous to the sowing of seeds of deleterious plants, and may be in its effect far more injurious. It may be in fact even more harmful than to tear down or remove a part of the building. It is in principle the same general kind of injury as the more familiar instances of waste. The possibility of germination of the disease germs which, it might have been found, were deposited through the action of the defendants within the house in question was or might have been found to be waste, unless it was shown that they could be removed by disinfection or otherwise, without material physical change in the building, so as to make it as safe for residence as before.

A case like this one should be submitted to the jury under instructions which would permit the plaintiff to recover the material diminution in the value of his property for every valuable use among ordinarily intelligent men arising from the occupancy for a small-pox hospital, provided the jury were satisfied that it was not reasonable and proper to let the building for this purpose, having reference to the probable effects on its future growing out of the presence of disease-producing conditions, in view of the existing state of the art of disinfection or other way of rendering it healthful, and excluding all sentimental or fanciful notions affecting only its reputation.

Testimony of Attending Physician Inadmissible in Will Case

The Supreme Court of North Dakota holds, in Auld vs. Cathro (128 N. W. R. 1025), that, the privilege of secrecy attaching to all information acquired by a physician from a patient in attending the patient professionally, in a proceeding contesting the probate of an alleged will of a deceased patient, the testimony and opinion of the latter's attending physician as to her mental capacity, based entirely on information derived from her statements or his observations while treating her professionally and for the purpose of such treatment, were properly excluded. The court says that while this question has not heretofore been passed on by it, and while some courts, notably Minnesota, Iowa and Missouri, have held under certain circumstances that such testimony was admissible under statutes somewhat similar to that of North Dakota, the court thinks the better rule is as above stated. New York, Wisconsin, California, Utah and other states hold such evidence inadmissible; holding that the privilege is personal with the patient, that it applies in testamentary matters, and cannot be waived by the heirs and personal representatives.

Neurasthenia and Movable Kidney.—Movable kidney is proved to be a cause of neurasthenia by the following facts: 1. There is no doubt about the very great frequency of movable kidney in neurasthenic patients, male and female. 2. When these movable kidneys are supported by a proper belt great relief is experienced. 3. Nephropexy cures neurasthenia. Not one relapse has been observed in 150 cases.—*C. W. Suckling,* in the *Practitioner.*

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

American Assn. of Genito-Urinary Surgeons, New York, June 1-3.
American Academy of Medicine, Los Angeles, June 23-26.
American Dermatological Association, Boston, May 25-27.
American Climatological Association, Montreal, Canada, June 13-14.
American Gynecological Society, Atlantic City, May 23-25.
American Laryn., Rhin. and Otol. Society, Atlantic City, June 1-3.
American Laryngological Association, Philadelphia, May 29-31.
American Medico-Psychological Association, Denver, June 19-20.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Otological Society, Atlantic City, June 26-27.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Proctologic Society, Los Angeles, June 26-27.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Surgical Association, Denver, June 19-21.
American Therapeutic Society, Boston, May 11-13.
Association of American Physicians, Atlantic City, May 9-10.
Cong. of Bds of Health of N. America, Los Angeles, June 30-July 1.
Connecticut State Medical Society, Hartford, May 24-25.
Florida Medical Association, Tallahassee, May 10.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maine Medical Association, Augusta, June 28-29.
Massachusetts Medical Society, Boston, June 13-14.
Missouri State Medical Association, Jefferson City, May 16-18.
Montana State Medical Association, Butte, May 10-11.
Nat'l Assn. for Study and Prev. of Tuberculosis, Denver, June 20-21.
National Association for Study of Epilepsy, St. Louis, June 16.
New Hampshire Medical Society, Concord, May 11-12.
New Jersey, Medical Society of, Spring Lake, June 13-15.
North Carolina, Medical Society of State of, Charlotte, June 20.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
Rhode Island Medical Society, Providence, June 1.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.
Wisconsin, State Medical Society of, Waukesha, June 7-9.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fifth Annual Meeting, held at Albany,
April 18-19, 1911

(Continued from page 1285)

President's Address: Medical Teaching and State Board of Medical Examiners

DR. C. STOVER, Amsterdam: An evolutionary movement originating within the medical profession has for some years been directed toward the elevation of medical education in the United States, and the last report to the American Medical Association by the Council on Medical Education was distinctly in the line of advancement. It was not marked by excessive tenderness toward the weak institutions, and fairly indicated the relative strength and weakness of the various medical colleges. The Council cannot greatly regret the appearance of the Carnegie report, for, having been criticized for its somewhat advanced position taken last year, by comparison the Council will be generally considered moderate, and its work in the future rendered easier. The medical schools that have the best laboratories and hospital facilities will attract the best prepared students, and it is equally true that the institutions having inadequate means of instruction will be distinguished by the inferiority of their students. It is at this point that the State Boards of Medical Examiners have abundantly justified their existence. The state has assumed the right to pass on the competency of the graduates of the medical colleges. They touch this problem at three points: (1) the preliminary educational requirements; (2) the facilities of the medical schools; (3) the examinations for licensures. The future of these boards will be marked by increasing importance and responsibility, for on their action more than on any other agency will these problems depend for their evolution. While this is fully appreciated nominations by this society for medical examiners will be among the weightiest duties to be performed. With the increasing importance of laboratory work, it does not require great far-sight to anticipate examinations on laboratory methods, in order to guarantee fully equipped physicians for practice. It is not unlikely that a national board may ultimately be evolved that will unify the chaotic practice of the various states. Is it not clear that if a curriculum of study is to be standardized in the medical schools, it will be equally necessary to have a standard of preliminary training in order to teach with any degree of efficiency? If so, then the entrance examination will be relied on to stop on the very threshold the ill-prepared students. If one were to venture a forecast of the future, it would be that a revolution is not impending, but that the intervention of the state, encouraged by advanced medical opinion, will increase the importance of medical examining boards, that higher and uniform standards of admission on entrance, and more rigid examinations for licensure will eliminate the unfit, and the colleges that best provide the equipment for education will survive, and those that are inadequately equipped must go to the wall. This seems inevitable.

Operations for Adherent Retrodisplaced Uteri by Shortening the Round Ligaments

DR. L. BROUN, New York: After the abdomen has been opened for pelvic conditions, the preference given by operators for retaining the retroverted uterus in an anterior position has been usually some intra-abdominal operation. The operations giving the best results are those in which the strongest part of the ligament is utilized. The Alexander operation, the operation of Gilliam, and also the Simpson operation all do this. The Peterson operation, with some slight modifications, has become so satisfactory in my hands that I have practically discarded other methods. It is for this reason, and because it seems to be little known, that I bring it before the society. The several steps of the operation as I carry them out are as follows: A horizontal incision after the manner of Pfannenstiel is made, but lower down in the area of the growth of the parts. The length of the cut need not be over two and a half inches long. The fascia is divided horizontally and dissected free from the muscle above and below. The recti and pyramidali are now separated, and the peritoneal cavity is entered. Through this opening in the abdomen adhesions can be severed, diseased tubes or the appendix can be removed, and all ordinary pathologic conditions dealt with. Having completed the necessary work in the abdomen, and before closing the incision, the fat in one angle of the wound is dissected free from the fascia in the direction of and up to the external abdominal ring, which is easily located by palpating the pubic spine. This dissection is quickly done with a few snips of the scissors. The skin is retracted beyond the ring, which is readily exposed to view. The round ligament is grasped and withdrawn until the reflexion of the peritoneum comes well in view. This is not stripped from the ligament. If preferred, the fascia can be split up for a short distance, making the ready picking up of the ligament easier. The external abdominal ring of the opposite side is exposed in the same manner, and the ligament is withdrawn, as in the corresponding side. Before anchoring the ligaments in the new position, I retract the edges of the abdominal wound to be sure that no loops of intestines lie over the fundus of the uterus, which generally will be found to be in admirable position. The ligaments are now stitched to the pillars of the ring with chromic catgut or silk, as may be preferred, and the abdominal wound is closed. While drawing out the ligament from the canal, I have found it of value to use for that purpose clamps in which the sharp edges of the serrations have been filed off and the edges also rounded. If ordinary artery clamps are used, the sharp teeth lacerate and cut through the ligament, causing much annoyance, and at times embarrassment. With a flat file the sharp serrations on old discarded clamps can quickly be taken off and at the same time the edges rounded. In dressing the wound after the completion of the operation, full pressure should be applied over the site of the operation to secure close approximation of the separated parts.

DISCUSSION

Dr. H. P. Jack, Canisteo: For the last ten years I have been doing operations for retroflexion of the uterus. In regard to the operation Dr. Broun has brought before us, I can see several objections which have occurred to me in the use of the Alexander-Adams operation. The ilio-inguinal nerve comes through the canal and is frequently injured and pressed on in any shortening of the round ligament, and although I do not do this operation myself, I have seen a number of cases in which the patients have suffered much pain in the region of the inguinal canal, much more pain than from the retroflexion. For that reason, I think Dr. C. H. Mayo has discarded the operation which he originated himself and in which he shortened the ligaments through the inguinal canal by bringing the forceps down and dragging the ligament through the canal. He has given up that operation entirely, and does the Noble operation of fastening the round ligament behind. That operation, he tells me, has been very successful. After ten years' experience with the Gilliam operation I cannot commend it too highly. Patients operated on by this method do not have pain afterward, and with the modification that has now been made we have an ideal operation. I have had a number of these patients go through labor, and the uteri are still in position. I think it has all the advantages of the Peterson operation, it is simpler of performance, and less liable to give pain in the inguinal canal, and requires less dissection.

Dr. L. Broun: I can only suggest that Dr. Jack try this operation, and he will be so pleased with its simplicity and the excellent position of the uterus afterward that I am sure he will do just as I have done, adopt it exclusively.

Diagnosis and Surgical Indications of Duodenal Ulcer

Dr. J. T. Pilcher, Brooklyn: It is impossible to differentiate duodenal ulcer from uncomplicated ulcers of the gastric outlet in some cases. The purest type of symptom-complex is evidenced by duodenal ulcer. There are four cardinal symptoms: chronicity, periodical exacerbations, peculiar pain, and pain relieved by the ingestion of food. In this paper I analyze 156 cases with reference to the cardinal symptoms named. The confirmatory conditions are obtained by analysis of the stomach contents. The hyperacidity of gastric secretions must be considered, and the existence of latent cases is not to be overlooked. There is no ground for conflict between the surgeon and physician in this field of work. The symptoms indicating operation are hemorrhage, stenosis, tumor, and intractability.

DISCUSSION

Dr. Alexander Lambert, New York: After twelve or fifteen years of pain and constant recurring discomfort and disability which such a condition brings about, these patients are glad to go to a surgeon and be relieved. Those are as much surgical cases as are the stenoses of the pylorus or ulcers of the stomach that have formed cicatrices and a more or less contracted or hour-glass condition. A question that is constantly referred to me is what should the medical man do to a young man or person who comes into his office who shows this symptom-complex for the first time? If in a healthy young person who has pain two or three hours after eating, which is relieved as soon as food is taken, and in which by gastric analysis the physician finds distinct hyperacidity, he is generally convinced in his own mind of the probability of duodenal ulcer. After a three days' test of no meat or blood-forming content in the food, one may or may not find occult blood in the stool. Should such a patient be sent to a surgeon for operation? I cannot settle this question from my own experience. Some years ago, I saw such a patient who gave that symptom-complex for the first time, and while quietly lying in bed suddenly bled to death from one large hemorrhage. A better care of the individual patients will be given by both medical men and surgeons if we can settle in our minds what should be done with the early single cases of duodenal ulcer, or those which present the syndrome which justifies us in considering they have duodenal ulcer.

Dr. Elliott P. Joslin, Boston: The average duration of cases of duodenal ulcer before operation is from twelve to thirteen years. What is the average duration of patients who have been subjected to gastro-enterostomy? That is still *sub judice*. We do not know how long these patients are to get on comfortably with that artificial opening. Undoubtedly patients in the class referred to by Dr. Pilcher should be operated on. It is the duty of medical men, whenever they advise operation for the relief of duodenal ulcer, to qualify their advice by saying that the operation shall be done by a man who has had considerable experience in gastric surgery.

Dr. Nathan Jacobson, Syracuse: The question of diagnosis was presented to me about two weeks ago when I was called to see a case of duodenal hemorrhage. The patient, a man of 49, was in an extremely low condition, with the sudden appearance of duodenal hemorrhage. Melena was very profuse; the hemoglobin percentage was nearly 40; the red blood-count a little over 2,000,000. This case presented a series of manifestations so different from what I had seen before, that I could not but consider that we were dealing with more than a simple duodenal ulcer. The first thing that stared me in the face in regard to the diagnosis was the absence of all previous gastric manifestations. This man had never had gastric distress and none of the characteristic manifestations portrayed in the paper. His temperature ranged from 101 to 102 F. While there was a loud endocardial murmur, it was not the hemic murmur we should get from simple loss of blood. It was accentuated. I found petechial spots, and the question arose as to whether we were not dealing with some other condition than duodenal ulcer. A blood-culture was made and a pure culture of pneumococcus was found. There was a case in which the blood-infection showed its first disturbance as duodenal hemorrhage. Once before I have seen intestinal hemorrhage which showed itself first with the symptoms of acute appendicitis as the first manifestation, a purpuric condition, a condition in which we have the appendix with other evidence of intestinal hemorrhage in its region, and subsequently hemoptysis, renal hemorrhage, and purpuric spots, and the first evidence of trouble in that case was intestinal hemorrhage. To those who have seen duodenal ulcers occur in the course of burns I will say that we may think of an acute case of duodenal hemorrhage, due to the pouring out of toxins in the duodenum and irritating processes there, and I want to emphasize the necessity of studying cases of acute hemorrhage and acute conditions and whether or not they are cases for operation. Certainly this case was not one for operation, and its subsequent course justified that conclusion.

Dr. A. E. Chase, Tarrytown: I recall the case of a boy who had been seen by physicians in New York and a number of diagnoses made. He finally came to Tarrytown, and a number of diagnoses were likewise made there. He was brought to the hospital in a moribund condition. He had general septic peritonitis, and I endeavored to do what I could for him. I made a rather large incision, and found the signs of septic peritonitis with considerable pus. But back of that the intestines were matted together by the firmest adhesions I have ever seen, these adhesions being so strong and dense that they could not be torn but had to be cut. In the midst of them was a sinus communicating with an old duodenal ulcer, passing down to the middle of the abdomen and up again to the spine. That sinus had been there for a long time. This boy had had duodenal ulcer for three years; it had perforated, and gave him general septic peritonitis, which caused death.

Dr. A. McFarlane, Albany: No man can tell beforehand what one must do in the individual case. But the important thing that the Mayos have brought clearly to our minds is that a great many of these patients who are relieved are not neurasthenics or nervous dyspeptics, but are suffering from serious anatomic lesions. Whether it is best to operate immediately, or to try local medical treatment in such cases, is a matter to be decided in each individual case.

Dr. I. Adler, New York: While in rare cases gastric ulcer will heal perfectly, duodenal ulcer never does, and the chances of doing irreparable harm are much greater there than in gastric ulcer. I believe that whenever duodenal ulcer has been diagnosed, operation should be decided on at once. It is only a question of time in my mind when operation should be recommended, and I would guide myself always by the appearance of the occult hemorrhage. If there is more or less occult hemorrhage, then I would not delay operation very long, but advise that it be done early.

The Bladder and the Prostate

Dr. John F. Whitbeck, Rochester: It has been estimated that at least one-third of all men after the age of 40 or 50 have enlargement of the prostate, and it is just as certain that hypertrophy of this gland or increase in size from any cause, whether simple or complex, involves the bladder in difficulties. If a patient can be persuaded and taught to lengthen gradually the intervals of urination within the limit of reason, much better control will be obtained with or without the aid of the catheter and patients should be as careful and deliberate as possible while passing urine in order the more completely to expel some portion of the residual fluid. Prostatectomy is rational and offers a complete cure when the individual has no serious organic disease, but is sound or may be made so. Experience shows conclusively that a man in fair health may be cured surely without danger. Contrast for a moment the entire relief afforded by the removal of the prostate when it is enlarged enough to act as an obstruction and a state in which the gland is allowed to remain and the lateral lobes to grow larger, while a middle or third lobe is formed and acts as a ball valve to close the urethral canal, although it lets a catheter pass easily. It is not the frequent desire and necessity to urinate, or the mere use of the catheter from which one shrinks and seeks relief, but the risk of infection, of cystitis, or calculus or pyelitis, or abscess of the prostate, or traumatism from the use of various instruments and the progress from bad to worse.

SYMPOSIUM ON SALVARSAN

Indications for Salvarsan in Syphilis

Dr. S. Pollitzer, New York: Every patient with active infective lesions of syphilis should receive a dose of salvarsan, every individual with extensive gummatous or ulcerative lesions should receive a dose of salvarsan. The effect of salvarsan on such lesions is in general so marked, so prompt, that in justice to our patients we owe them this treatment which so greatly shortens the period of the local treatment. Patients in whom important structures, like the eye or the throat, are involved, should receive salvarsan, as also those with painful lesions of the bones or of the throat and syphilitic cachexia. In these cases the effect of the drug on the constructive metabolism is most striking; a gain in body weight of from 10 to 15 pounds within a fortnight has been observed repeatedly. Individuals with syphilis complicating pulmonary tuberculosis should also receive salvarsan. In these cases the tuberculous process is aggravated by administration of mercury and iodid, and the fear of further damaging the patient's lungs makes it difficult to treat the syphilis properly. Infants with hereditary syphilis should receive salvarsan in minute doses. Here, again, we have the prompt antisyphilitic effect of salvarsan aided by its tonic effect on metabolism. This drug is also useful in an early stage of tabes with pains or sphincter symptoms. While we cannot expect to restore degenerated nerve tracts, the work of Erb and Nonne has made it seem probable that in early tabes there are still active syphilitic foci in the cord, and it seems likely that salvarsan will at least exercise an inhibitory influence on the course of the disease. In the rare cases of oversensitiveness to mercury on the one hand, or of resistance to the effect of mercury on the other, the patients should be treated with salvarsan. Patients who, notwithstanding a thorough course of mercury, show a positive Wassermann reaction, even in the absence of visible lesions, should receive a dose of salvarsan. In the present state of our knowledge a positive Wassermann reaction must be regarded as evidence of an active focus of syphilis. In several individuals who had received a four or five months' course of salicylate of mercury injections in doses up to 5 grains, a persisting positive Wassermann reaction was promptly changed by an injection of salvarsan.

Action of Salvarsan on the Wassermann Reaction

Dr. Howard Fox, New York, presented a tabulated list of thirty-four cases in which salvarsan had been used, and drew the following conclusions:

1. It is difficult at present to draw general conclusions, owing to the great discrepancies in the results of various observers.
2. These discrepancies are partly due to the different methods of injection and to the different stage of the disease in which the injections were given.
3. The results of a single injection given by either the intravenous or intramuscular methods are, as a rule, rather unsatisfactory from the serologic standpoint
4. Repeated injections seem to have given better results and offer a more hopeful outlook for the future.
5. The action of salvarsan on the Wassermann reaction is, in general, analogous to that of mercury.
6. The effect on the Wassermann reaction is much less favorable than on the clinical manifestations of syphilis.

Therapeutics of Salvarsan

Dr. S. J. Meltzer, New York, laid special stress on the scientific principles which form the basis of Ehrlich's experiments in contrast to the use of mercury, which is a remedy hit on by chance. He described the steps by which Ehrlich evolved salvarsan and the brilliant results that have been obtained, and stated his belief that this discovery may be the means of raising therapeutics to the dignity of a science. This article will be published in full in The Journal.

Treatment of Syphilis with Salvarsan

Dr. John A. Fordyce, New York: This paper presents an analysis of the clinical and serologic results obtained in the treatment of 175 patients with this disease with salvarsan. Salvarsan gives more rapid and brilliant results in this class of cases than is seen from the administration of the classical drugs. It is possible that there is here a different strain of organisms more easily influenced by salvarsan than by mercury and potassium iodid. The lesions heal rapidly, a decided increase in weight occurring within two weeks, and the temperature often becoming normal. In advanced disease of the nervous system no benefit was noted from the administration of the drug, but in several cases of early tabes, in one of paresis, in endarteritis of the base of the brain, and in several cases with persistent headache most gratifying results were obtained. In this series of cases there were six relapses, all after treatment with a single dose. They are periosteal lesions in a case of malignant syphilis, plantar and palmar syphilis, mucous membrane lesions and acute unilateral optic neuritis and iritis. Failures were encountered in advanced tabetics and paretics, and in five cases of hereditary syphilis, but three of the latter it is hardly fair to class as failures, since the dose was inadequate. In only one case were by-effects noted which have given any anxiety, namely, convulsions and hemiparesis three days after an intramuscular injection of 0.2 gm. alkaline solution to a child 7½ years old with an extensive gummatous infiltration of the nose and upper lip. The child made a good recovery, and the lesions for which it was treated healed rapidly.

Technic and Methods of Administration of Salvarsan

Dr. Homer Swift, New York, described the method of preparing the salvarsan solution and its employment.

A Few Plain Truths About Salvarsan

Dr. W. S. Gottheil, New York: Salvarsan is valuable in certain cases as an *additional* weapon in our armamentarium, but it does not accomplish the marvels attributed to it. It does not cure any more than does mercury. It is powerful in combating symptoms. Symptoms of the persistence of syphilis appear more *frequently* after treatment with salvarsan than after treatment with mercury. Individuals recently infected are the only ones in whom its efficacy must be estimated. Mercury is still the antisyphilitic for general use. The latest advice from high places is to use salvarsan first, and then to go back to mercury. Cases of idiosyncrasy in which mercury cannot be borne are not so frequent as some would have us believe since the discovery of salvarsan. Salvarsan has been efficacious in the early type of syphilis. The symptomatic effects are equal to those of mercury and sometimes fail. Salvarsan is as useless as mercury in late cases. It is useful in persistent lesions in mucous patches, and in cases not permitting of long medication.

By-Effects of Salvarsan

Dr. James Winfield, Brooklyn: The by-effects are local, organic and general. The local effects are pain, infiltration, sloughing, necrosis, especially with the subcutaneous method of injection, swelling of the lymphatic glands in the neighborhood, scarlatiniform eruption, icterus, herpes zoster and urticaria. Among the organic effects are pulmonary embolism and pneumonia, cardiac and circulatory disturbances, hemorrhagic nephritis and acute necrosis of the convoluted tubules. There are no serious effects on the gastro-intestinal tract. Affections of the cerebrospinal system seem to increase after its use, also ocular involvement and oral effects, which are often transitory. The vital organs should be carefully examined before this remedy is used for any deviation from the normal.

Discussion on Salvarsan

Dr. George Henry Fox, New York: To those who imagined that syphilis was to be forever cured by one dose of salvarsan, and that thereafter mercury will be of value on account of its historic interest, the disappointment has been severe. Even those who have witnessed beneficial results of the remedy, or the numerous and speedy reliefs which have occurred, have been disappointed in a milder degree. While salvarsan has proved a disappointment and in some respects has not yet and probably never will fulfil the high hopes its discoverer intended, it must be admitted that in many cases it has proved to be a remedy as efficacious in its action as it was brilliant in its inception. From what I have observed in private practice and hospital experience, I am convinced that it is a remedy which in certain cases is able to accomplish what no other remedy or method of treatment has done. While I agree with Dr. Fordyce that salvarsan has accomplished what mercury has never accomplished, at the same time I heartily concur in the assertion made by Dr. Gottheil that the disappearance of the symptoms is by no means indicative of a cure of syphilis.

(To be continued)

TENNESSEE STATE MEDICAL ASSOCIATION

Seventy-Eighth Annual Meeting, held at Nashville, April 11-13, 1911

(Concluded from page 1287)

Fractures of the Tibia and Their Treatment

Dr. P. F. Eve, Nashville: I have treated many of these fractures and have had a number of others under observation; in not a few instances I have seen ununited fractures which demanded operative interference. In some of these cases the interposition of the soft parts prevented union, while in others the inability to maintain the fragments in coaptation caused a like result. I have come to the conclusion, therefore, that there are some varieties of fractures of the tibia which call for an open method of treatment. I base this conclusion on the following facts: 1. Should non-union occur from the interposition of the soft parts, and an operation be required after waiting the requisite length of time for union, the very nature of this operation results in a much greater shortening than would have occurred had the operation been performed at the time of the injury. 2. The time required for union in such cases is twice as long. 3. The physical condition of the patient is not nearly so good as soon after the receipt of the injury, his general health having suffered in the many weeks which have elapsed in the effort to accomplish healing of the fracture. 4. The anatomic and cosmetic appearance is not so pleasing

Report of Case of Pellagra

Dr. E. H. Jones, Murfreesboro: In this case the patient lives in the country, appears well, and is working and has been doing so all fall and winter. The treatment consisted of arsenic, iron and strychnin, the arsenic being pushed to tolerance.

DISCUSSION

Dr. J. M. King, Nashville: There have been forty or fifty cases of pellagra in and around Nashville, and I have seen a number of them. The treatment has been climatic, together with the use of iron, quinin and strychnin. I have not pushed the arsenic too much. Moderate doses of arsenic are sufficient, with the very best of food and nursing, with probably bismuth or some of its preparations for the diarrhea.

Dr. J. P. Runyan, Clarksville: Has menorrhagia been a prominent symptom in any of the cases? In two cases I have seen that symptom was pronounced.

Dr. W. Litterer, Nashville: It is the general consensus of opinion that pellagra is contracted through the intestinal tract—that it is some kind of intoxication. Whether it is produced by the food that is ingested or by some bacterium, we do not know. Torrance and McAlester have given salvarsan intravenously in three cases of pellagra with marvelous results.

Dr. J. Overton, Nashville: It is proper to employ tonic treatment for a week or so, but unless decided improvement is shown, some more radical procedure should be resorted to, such as direct transfusion. Cole has obtained a remarkable percentage of recoveries in severe cases of pellagra by transfusion.

Dr. W. Frank Glenn, Nashville: I do not believe that good corn meal will ever produce pellagra, but I am inclined to believe that the disease is communicable.

Dr. L. L. Sheddan, Knoxville: I know of two cases of pellagra in which menorrhagia was a symptom.

Dr. B. J. Rash, Nashville, narrated a case of pellagra in which menorrhagia was a symptom.

Dr. C. N. Cowden, Nashville: I treated a patient for two or three months for infection of the skin, but later a diagnosis of pellagra was made. One diagnostic symptom of pellagra is extreme redness of the tongue.

Dr. M. C. McGannon, Nashville: A young girl had been under my care for two years, and I was unable to account for the inflammation of the vagina which was so intractable to treatment. The condition of the patient steadily progressed until now she has developed all the symptoms of pellagra without, however, any skin eruption.

Reform in Public Schools

Dr. O. Dulaney, Dyersburg: There is need of reform in public schools with reference to hygiene and sanitation. Medical inspection of school children is of great importance, as are also the frequent inspection of buildings by a sanitary officer, and the need of law governing school buildings, and the necessity for medical representation on the state board of education.

The Physician and the Public

Dr. John A. Witherspoon, Nashville: Physicians are in a measure public men, in that they should be the guardians of the health and lives of the people. A physician should stand for everything that is right and uplifting in his commonwealth. His standing in his community should be such that his influence is great and widespread. Belonging to a profession of highest ideals and greatest of responsibilities, in which his opportunity to do good is as great, if not greater, than the ministry, the people have a right to expect a great deal from him. At the same time, they owe a great deal to the physician and should uphold his hands in every way. It is high time that the press, law-makers and people should recognize the fact that the medical profession is the most self-sacrificing in the world; and quit this idle talk of doctors' trusts and all other equally fallacious and untrue statements which only retard the efforts of physicians in the public interest and give to the enemies of mankind a weapon to be used to retard progress and keep from the people the wonderful and life-saving methods which modern medicine offers in the way of preventing disease and insuring that development, mentally and physically, so necessary to the welfare of mankind and good citizenship. Physicians have been subjected to charges of all kinds of crimes and misdemeanors by means of pamphlets circulated by an alien, who suddenly is so much in love with our people that he rushes to their rescue from the north as a representative of the National League of Medical Freedom—whatever that is. I understand that it is composed of the "patent-medicine" manufacturers and others who have been the vampires that sucked the blood of our people so long that they have grown arrogant and dictatorial to the extent that they assume to themselves all the virtue and wisdom of the age and ruthlessly and falsely make charges against the medical profession. Our duties to the public do not end here, but to see that none but safe, moral and competent physicians are permitted to enter the profession. To practice medicine is a very sacred and grave responsibility and the people have a right to expect protection. How can this be done? In two ways: First, by insisting that none but high-grade, well-equipped medical schools for the training of the young men be tolerated; second, by passing such laws by the legislatures that none but moral and well-qualified doctors can be licensed to practice. The passage of good laws and the appointment of strong and competent men to enforce them would soon rid this country of charlatans and ignorant pretenders and strike the death-blow to quacks and venders of nostrums, whose stock in trade is the cupidity and ignorance of the people. If there is any creature any lower than he who traffics in the ills and afflictions of his fellowman, or he who withholds any remedy or treatment that might alleviate human suffering or assist in any way to save human life, it has never been my fortune to meet him. We are misunderstood and often accused of selfish motives when we raise our voices in protest against fads or harmful practices by which individualism and often life is sacrificed on the altar of ignorance.

Acute Inflammatory Glaucoma

Dr. Walter Dodson, Gallatin: Iridectomy is the greatest of all primary operations for glaucoma, but after the operation has been done and the pain and increased tension continue, or should we have a recurrence of the disease, I would not further mutilate the iris by doing a second or third iridectomy, but would do a cyclodialysis. This operation has fallen into disrepute as a primary operation, unless the eye be blind before operation, and then it seems to be the ideal operation. Enucleation is reserved as the last resort, but we find many persons who have been neglected until the eye is blind, and the eye-ball or some parts of it are undergoing a stage of degeneration.

Typhoid Fever

Dr. Thomas Weaver, Nashville: Two outbreaks of typhoid fever in an institution were traced to bacillus-carriers. These outbreaks serve to emphasize several points that may well be remembered. First, the question of bacillus-carriers is one of very great importance, and should always be borne in mind in tracing the source of infection in an outbreak of typhoid fever. Second, the possibility of this danger should be considered in the employment of cooks and other culinary employees, not only in private families, but especially in institutions. Third, it should not be forgotten that the presence of Eberth's bacillus in the stools of bacillus-carriers is by no means constant, and repeated examinations are frequently necessary for its detection.

Practical Laboratory Work for the General Practitioner

Dr. N. Evans, Nashville: Gastric diseases do not receive the attention from a scientific standpoint by the general practitioner which they deserve. They are very frequent, occur for the most part among the better classes, and in a large proportion of the cases are relieved by proper treatment. In many cases it is absolutely essential, in order to make a correct diagnosis, to examine the stomach contents by means of the chemical tests for hydrochloric acid and the organic acids. It is the duty of the teachers of microscopy and allied subjects in medical colleges to make the students see clearly the difference between the laboratory procedures which have simply an educational value and those which have an immediate practical importance. In the latter every man should be so thoroughly trained that he is master of them, can perform them with absolute assurance, and can trust his own findings in, for instance, the recognition of tubercle bacilli, the malarial parasites, and urinary casts. I am satisfied that many physicians graduate from medical colleges without the practical experience in these simpler methods which they ought to have. I believe the plan is most satisfactory where two physicians are associated together in practice, where one can do the greater part of the necessary laboratory work. In most cases the younger men who have more recently worked in the college laboratories will be better fitted to do that part of the work.

The Disease and the Man

Dr. W. B. St. John, Bristol, gave a condensed history of physicians who are discoverers of diseases which bear their names, giving incidents in their lives, their best-known works, under what circumstances their contributions to medicine were brought about, where they were born, what good they did, and how they are remembered and the debt of gratitude the profession owes them.

The Duty of the Country Physician to the Mother and Child

Dr. Howard C. Curtis, Algood: Every mother should be told how to care for her baby, no matter what her circumstances or environment in life; the poorer and more unfortunate mother should have special attention to enable her to better care for her offspring. She should, if possible, nurse her child, and be taught the proper care of the infant's eyes, its mouth and skin, and that it should have a daily bath; that the clothing should be light and cool; that it should have plenty of outdoor exercise; fresh water to drink instead of paregoric and laudanum; that it should have regular habits, and also that it should have regular hours to nurse. A good many other things—feeding, etc.—should not be neglected.

Salvarsan and the Wassermann Reaction in Sixty Cases of Syphilis

Dr. W. Litterer, Nashville, drew the following conclusions:

1. The consensus of opinion now is that a single injection has in favorable cases approximately the same results as a four or five months' treatment with mercury.
2. Salvarsan seems to be of particular value in malignant precocious syphilis, in threatening destructive processes, and in cases that are refractory to mercury.
3. There seems to be no uniformity between the disappearance of the Wassermann reaction and in the improvement of the patient.
4. In a number of instances relapses could be detected by the Wassermann test before clinical symptoms manifested themselves.
5. More favorable results can be expected in a beginning tabetic showing a distinctly positive Wassermann reaction than in one in which a slight reaction appears.
6. In the majority of instances administration by the extravenous (intragluteal) route should first be instituted, since it is the safest method. Should the patient not become Wassermann-negative, the intravenous route may be resorted to.
7. In my series, after a single injection, 35 per cent. resulted in a negative Wassermann reaction in six weeks' time. Out of this number 15 per cent. showed a positive test in three months, while an additional 6 per cent. recurred two months later.
8. A final opinion as to the permanence of its action can only be given after a lapse of several years, during which time both clinical manifestations and Wassermann reactions must be carefully observed.

Treatment of Syphilis

Dr. W. F. Glenn, Nashville: After many years' experience with various preparations of mercury, I feel sure that we can hope for less good from proto-iodids than from any other preparation. I would not willingly abandon entirely the use of a remedy, such as mercury, which has been a sheet anchor for almost 400 years; at the same time I regard salvarsan as a great addition to the therapeutics of syphilis, and truly a boon to humanity.

Injuries of the Head

Dr. D. Eve, Jr., Nashville: There are three prime indications in the surgical treatment of fracture of the base, and these are asepsis, relief of compression, and drainage. In case a fracture communicates with the nose, the nostrils are sprayed with mild antiseptic solution, gently dried and packed with sterile gauze, the packing should not be very tight, the idea being to filter all the air reaching the seat of fracture. In the middle fossa, first place a little piece of sterile cotton in the canal of the ear, then wash the whole outer ear with green soap and sterile water, then remove the cotton and douche the canal with warm normal salt or boric acid solution and insert gauze loosely into the canal. Fluff gauze is placed on this, and retained with a bandage. Compression is relieved by the decompression operation and lumbar puncture. If the fracture involves the anterior or the middle fossa, the operation consists of subtemporal trephining in the temporal region with drainage. Cushing advises trephining on both sides; with fracture of the posterior fossa, the operation should be occipital decompression with drainage. Patients with dilatation and fixation of both pupils, deep coma, rapid rise of temperature and stertorous breathing are rarely benefited by operation. We often see patients in whom the coma is not profound after the accident, but later grows gradually or suddenly worse, showing signs of increased intracranial pressure, then operation with drainage will save many of them. Lumbar puncture should be done for diagnostic and therapeutic purposes. It is a positive means of distinguishing subdural hemorrhage from supradural hemorrhage; also it diminishes the intracranial tension. Ransohoff uses repeated lumbar puncture in cases in which the coma is not profound, and claims that this takes the place of the decompression operation.

Appendicitis With Concurrent Typhoid Fever

Dr. W. D. Sumpter, Nashville: In a case of appendicitis in which the symptoms of typhoid did not appear until after operation, the distal end of the appendix was distended with thick pus and was so near rupture that after the operation, in handling it, pus oozed spontaneously from its wall. The proximal end appeared normal except for adhesions.

Vaginal Hysterectomy

Dr. J. A. Gaines, Nashville: The vaginal method of hysterectomy is indicated for carcinoma of the cervix of corpus uteri in any case in which there are not such glandular involvements as preclude operation by any method. For non-adherent fibroids not too large to be delivered by the vagina the operation is indicated. Either general myofibroma, subperitoneal or submucous tumors are easily dealt with in this way. This method is also greatly superior in dealing with prolapsus uteri after the child-bearing period is passed, as it lends itself more readily to the plastic work required to support cystocele and rectocele, one or both of which are always found in association with this condition. The vaginal route offers ready access to the ovaries or tubes which may be removed, resected, or the tube removed, leaving any part of the ovary desired, with as careful plastic resection as the abdominal route will permit. No vaginal celiotomy for any cause should be done without a thorough preparation of both vaginal and abdominal fields. In any vaginal hysterectomy, conditions may arise or be found making it most desirable to finish by the abdominal route, using the combined method, which is preferred by some as a regular procedure.

Other Papers Read

The following papers were also read: "Lacerations of the Deep Urethra," by Dr. J. J. Waller, Oliver Springs; "Pellagra Associated with Uncinariasis," by Dr. J. W. Breeding, Ravenscroft; "When Does the Gonorrheic Cease to be Infectious?" by Dr. C. F. Anderson, Nashville: "Surgery of the Intestines," by Dr. J. H. Carter, Memphis; "The Relationship of Food to Disease," by Dr. E. A. Timmons, Columbia; "Technic for Intravenous Injection of Salvarsan," by Dr. E. T. Newell, Chattanooga; "Sarcoma of the Stomach," by Dr. J. Overton, Nashville; "Oblique Inguinal Hernia," by Dr. D. Eve, Nashville.

House of Delegates

The House of Delegates by resolution commended the work of Senator Owen, of Oklahoma, in his effort to promote the passage of national legislation for the establishment of a National Department of Health, and urged each member to interview Senators Taylor and Lee of Tennessee, with a view to enlisting their support in the passage of the bill.

The association adjourned in a body and appeared before the Committee on Ways and Means of the Senate, and urged the passage of the following bills: a model vital statistics bill, a state hygienic laboratory, and the medical inspection of school children. The senatorial committee, after listening to speeches from several members of the medical profession, in less than thirty minutes, recommended the three bills for passage. A similar hearing was granted the profession before the Committee on Ways and Means of the House, where the opposition to the bill on the medical inspection of schools was violent, but it is thought that the three bills will finally pass.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 20

1 *Scoliosis with Marked Structural Change and Rotation. R. Soutter, Boston.
2 Acute Postoperative Dilatation of the Stomach. E. W. Lee, New York.
3 *Id. R. T. Morris, New York.
4 An Analysis of Forty-Six Cases of Prostatectomy. L. Davis, Boston.

1. **Scoliosis.**—Soutter pleads for the more thorough treatment of stiff scoliotic cases, in many of which absolute correction of the curve seems practically impossible. Simple, flexible and uncomplicated curves are not considered in this paper. He urges that the general condition must be improved. Developmental exercises should be done systematically, all exercises taken in a position which brings a minimum strain on the deformity. This may be accomplished best by suitable machines for the purpose under skilled assistants. It is accomplished also at home to a less extent. The flexibility of the spine in all directions should be increased; having attained this, and improved the general physical condition, the state of mind and endurance of the patient is much better. The periods for eating, for rest and for work should be established with regularity. Correction of the deformity is started during the development and flexibility treatment; later it is carried to a greater extent and the points of greatest deformity attacked more vigorously. Exercises are adjuncts in the treatment but will not take the place of especially adapted corrective machines and apparatus applied to the deformity. The advanced case of scoliosis should not be trifled with.

In addition to the appliances in which the patient is treated for from three to four hours each day, the patient should have apparatus to wear when about, and other apparatus to wear when in bed. The amount of apparatus and the treatment necessary varies with the patient. The apparatus worn at night is made after a certain amount of correction has been attained. The night and day apparatus must be carefully adapted to the improvement. Corrective jackets follow the other treatment. The patient is kept recumbent and successive corrective jackets applied either from remodeling the cast or from newly applied jackets. Following from two to four months of corrective apparatus, a retentive apparatus is applied, maintaining the full correction in a comfortable way and the patient is allowed to go from two to six months, when further treatment may be instituted, according to the requirements.

Excellent results were obtained in 182 cases treated by Soutter. Sixty-five, or one-third, were greatly corrected; ninety-seven were improved; in twenty, while the patients were benefited in strength, endurance and health, their curves were not improved. Considering the degree of rigidity as a factor in those that were greatly corrected, thirty-nine were of slight degree of rigidity, none was extremely rigid. In the cases with marked improvement, thirty-two were slightly rigid, twenty-eight were rigid and thirteen were extremely rigid. Of the patients who were improved, three were slightly rigid, eleven were more rigid and eight were extremely rigid.

3. **Acute Postoperative Dilatation of the Stomach.**—In cases of acute gastric dilatation Morris advises placing the patient on the abdomen, inclined a little to the right side. That will mechanically compress the dilated stomach and unkink the duodenum. He would wash out the stomach every hour or two if necessary with the stomach tube. That allows the postural mechanical resource to become more effective, and it takes away saprophytic poisons.

New York Medical Journal

April 22

5 The Starnook and the Window Tent: Two Devices for the Rest Cure in the Open Air and for Outdoor Sleeping. S. A. Knopf, New York.
6 The Study of Fats and Lipoids in Animal Tissues. J. Wright, New York.
7 The Prevalent Misuse of the Prostate in Gonorrhea. H. G. Klotz, New York.
8 Chronic Backache: Etiology; Treatment. C. Ogilvy, New York.
9 *A Case of Psychogenetic Convulsions, Simulating Epilepsy. H. W. Frink, New York.
10 *Clinical Studies in the Pepsin and Diastase Content of Urine. E. H. Goodman, Philadelphia.
11 Breaking Down of Wounds Following Operations. J. J. Gilbride, Philadelphia.
12 Studies of Antiformin Resistant Microorganisms Found in the Brain of Animals Infected with Rabies. F. Proescher, Pittsburg, Pa.
13 Clinical Importance of the Impure First Sound at the Cardiac Apex. S. Neuhof, New York.

9. **Psychogenetic Convulsions.**—A woman, aged 23, gave a history of attacks of *petit mal* from her second to her fourth year; she had *grand mal* attacks, from four to twenty a month, from the fourth to the twenty-third year, with hallucinatory attacks, and compulsive ideas. Treatment by suggestion produced immediate and almost complete relief for a period of eleven months.

10. **Pepsin and Diastase in Urine.**—Goodman is convinced that no diagnostic aid is to be sought in the amount of pepsin or diastase in the urine. He disclaims all value for the determination of the ferments in the urine, *per se.*

Kentucky Medical Journal, Bowling Green

April 15

14 Indications for the Induction of Premature Labor. J. G. Cecil, Louisville.
15 Pernicious Anemia. O. W. Doyle, Louisville.

Journal of the Indiana State Medical Association, Fort Wayne

April

16 Catheters, Sounds and Drainage Tubes: Their Selection, Care and Use. W. N. Wishard, Indianapolis.
17 *A Plea for the Cesarean Operation, Based on a Report of Fifty-Three Cases Performed in Indiana. G. W. H. Kemper, Muncie.
18 *The Conservatism of Elective Cesarean Section. O. G. Pfaff, Indianapolis.
19 The New Physician. M. C. Kimball, Converse.
20 *Bone Transplantation. D. Ross, Indianapolis.

17 and 18. Abstracted in THE JOURNAL, Nov. 26, 1910, p. 1926.

20. **Bone Transplantation.**—By an accidental discharge of a gun, Ross' patient was shot in the middle third of the right leg, the shot carrying away part of the tibia and fracturing the fibula, and completely destroying the anterior tibial group of muscles in the middle third of the leg. A posterior splint, well-padded, was applied with plaster-of-Paris encasing the foot and the thigh. The father refused to allow the foot to be amputated. Infection followed and for a while threatened the life of the patient. When it became evident that union was not going to take place voluntarily, Ross began to look about for some means of relief and finally decided to try Huntington's suggestion of using the fibula in a somewhat modified form. An incision was made about 6 inches in length midway between the tibia and fibula in the lower part of the upper third and the upper part of the middle third of the leg. The muscles were carefully dissected away and the fibula was cut about 2 inches below its articulation with the tibia. The adjacent borders of the two bones were denuded of periosteum and fastened with nails which were removed ten days later. The tibia and fibula had become united by callus below the seat of the fracture so required no care; except for a pointed projection, there was a space of at least 1½ inches between the bones. One fragment of dead bone in part filling this space was removed and the cavity curetted and cleansed as well as possible. Considerable infection followed with breaking down of scar tissues. Despite this, in four weeks' time the union was fairly firm. The patient walked on the foot about seven months after operation. The limb is about 1¼ inches short, due in part to shortening allowed to bring ends of bone nearer together and, in part, to imperfect growth since accident, as the left foot is about ¾ of an inch shorter than the right. Shortening does not seem to have increased since operation. The gap between the ends of the tibia is completely filled with new bone.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

April 1

21 *The Selection of Operation for Inguinal Hernia. A. MacLaren and H. P. Ritchie, St. Paul.
22 The Grossich (Iodin) Method of Skin Sterilization. E. C. Robitshek, Minneapolis.
23 Finkelstein's Classification of Diseases of the Gastro-Intestinal Tract in Infants. F. W. Schlutz, Minneapolis.
24 Signs Determining the Activity and Latency of Tuberculosis. E. L. Tuohy, Duluth.

21. Abstracted in THE JOURNAL, Jan. 28, 1911, p. 298.

New York State Journal of Medicine

April

25 *When Shall We Operate in Puerperal Septic Infection? J. O. Polak, Brooklyn, N. Y.
26 *Extra-Uterine Pregnancy. A Review of 100 Consecutive Operative Cases. C. Graham, Rochester, Minn.
27 Diagnosis of Ectopic Gestation. C. F. Adams, New York.
28 Appendicitis During Pregnancy. C. C. Lytle, Geneva, N. Y.
29 Toxins, Antitoxins, Antiserums and Bacterial Vaccines, with Comparisons. G. F. Seaborn, East Orange, N. J.
30 A Case of True Staphylococcus Pyemia Treated Exclusively with Vaccines. W. A. Sherwood, Brooklyn, N. Y.
31 Bacterial Vaccines in Middle [illegible] ants and Young Children. E. M. S [illegible]
32 A Case of Otitic Meningitis [illegible] Abscess. Operation. Recovery. S. [illegible]
33 Treatment of Diffuse Perit [illegible] Watertown, N. Y.
34 County Hospital Care for the Tuberculous. D. B. Hardenbergh, Middletown, N. Y.
35 Embolism and Thrombosis of the Mesenteric Vessels. E. C. Thompson, Newburgh, N. Y.
36 Functional Albuminuria. I. O. Nellis, Herkimer, N. Y.
37 Iodin Disinfection of Wounds. C. F. Nieder, Geneva, N. Y.
38 Rewards of the Obscure Physician. M. J. Sanford, Suffern, N. Y.
39 The Economic Consciousness of the Physician. S. B. Allen, Riverhead, N. Y.
40 Therapy in Typhoid. T. H. Dexter, Brooklyn, N. Y.

25. **Puerperal Septic Infection.**—The query propounded in the title of this paper is answered by Polak as follows: Each case of postpartum or postabortal infection must be studied individually, and an accurate diagnosis made on the clinical and bacteriologic findings, before any treatment is instituted. Nature is competent in the majority of instances to localize and circumscribe the infection. Operative procedures should be avoided if possible, and are not indicated unless there is demonstrable evidence of intrapelvic or abdominal inflammation, necrosis or suppuration. Curettage, douches and examinations during the acute stage, break down barriers and open avenues for the further dissemination of sepsis to the myometrium, parametrium and adjacent tissues, and the danger from curettage increases with each month of pregnancy. Enormous pelvic and abdominal exudates may disappear without operation, and in time enlarged ovaries, tubes, etc., may assume their proper size and function, and so long as the patient's general condition improves, no surgery is advisable. All operations are attended with less risk after the acute stage of the infection has subsided, and an exact diagnosis is more easily made at this time. After the uterus is thoroughly emptied, the pelvis should be left absolutely alone, and every effort should be made to support the patient and increase the natural blood resistance.

Vaccine therapy has a definite but limited field in the treatment of puerperal septic infection. Inoculation with autogenous vaccines will promise prompt results in staphylococcus and colon bacillus infections, but in streptococcus poisoning vaccine treatment is unreliable and is of value only when the virulence of the germ is attenuated, or when Nature has already developed a phagocytic defense.

Extraperitoneal drainage of local foci should be elected when possible, either by incision just above Poupart's ligament or by posterior vaginal section, and when this is impossible, because of an inability to determine the exact anatomic relations of the local focus, an exploratory laparotomy is justifiable in order to make an exact diagnosis, and to determine on the safest route for drainage. Operative interference, in the acute stage of sepsis, is only indicated in general purulent peritonitis, postabortal pelvic peritonitis, infected tumors in or near the genital tract and uterine rupture, when said rupture has occurred in the course of labor and has been handled outside of a well-managed maternity, and finally, thrombophlebitis is a conservative process on the part of Nature to limit the infection, and any form of pelvic manipulation only tends to break down and separate parts of these thrombi, extending the infection to the more remote parts, and thus jeopardizing the patient's life.

26. **Extra-Uterine Pregnancy.**—In this series of cases, fifty pregnancies were on the right side, forty-four on the left, one double, and the others were not recorded. Sixty-six cases were diagnosed as ectopic, fourteen (three diagnosed fibroids and four with a question of appendicitis) as pelvic tumor, with a question as to the cause, but no mention of ectopic pregnancy, three as appendicitis, four as twisted pedicle or extra-uterine pregnancy, seven pelvic inflammation (pyosalpinx, hydrosalpinx, etc.). In some cases gall-stones and perforations were considered in making the diagnosis, one patient being sent for gall-stones only and gall-stones were found. Five did not give a diagnosis, though most of them gave a clear history and were recommended to the hospital for surgical pelvic trouble. In summing up the points in differential diagnosis, Graham says: Briefly, one gets (1) the history of a normal menstruation missed, usually but a few days (fourteen), possibly weeks; (2) there are more or less severe colicky pelvic or abdominal attacks, alternating irregularly with periods of perhaps normal health, (3) accompanying these painful attacks or immediately following them is a scanty, intermittently prolonged flow; (4) examination reveals pregnant changes in genital tract, smooth, velvety mucous membrane, softened cervix, enlarged uterus, a tumor, tender, localized and not large, before rupture. After rupture, tender and large without a prolonged history to account for its size, and no history of infection. Vomiting, chills and fever with fainting and collapse attend the severer cases. Careful history development and careful physical examination should leave fewer unmade diagnoses in extra-uterine pregnancies.

Journal of the Michigan State Medical Society, Battle Creek

April

41 Alcohol as a Factor in Mental Diseases. G. F. Inch, Kalamazoo.
42 *Operations for Radical Cure of Inguinal and Femoral Hernia Under Local Anesthesia. J. A. MacMillan, Detroit.
43 Diagnosis of Surgical Diseases of the Kidneys and Ureters. J. D. Matthews, Detroit.
44 Pellagra. B. N. Colver, Battle Creek.
45 *Id. E. L. Eggleston, Battle Creek.
46 Chorea Minor. I. L. Polozker, Detroit.

42. Abstracted in The Journal, Nov. 5, 1910, p. 1676.

45. Abstracted in The Journal, Oct. 22, 1910, p. 1492.

Iowa Medical Journal, Des Moines

April

47 Prevention of Typhoid. A. C. Page, Des Moines.
48 Gonococcus Infection in Girls, Wives and Mothers. J. C. Powers, Hampton.
49 *Modified Pyloroplasty. F. S. Hough, Sibley.
50 Traumatic Synovitis of the Knee. A. Steindler, Des Moines.
51 A Plea for Therapeutic Advancement. D. G. Lass, Ocheyedan.
52 *Probable Cause of Acute Poliomyelitis. D. S. Grossman, Minburn.

49. **Pyloroplasty.**—Hough thinks that his modification of the ordinary pyloroplasty might prove effective by furnishing a permanently large pylorus and could be done with greater ease than Finney's operation and in some cases in which a Finney operation would seem to be impracticable. The objection to it is that it is an open operation and cannot be done with clamps, but in a patient prepared properly and guarded by gauze, this is not to be considered seriously. It is the sliding of a wedge of stomach wall into the spreading duodenal part of the incision. This is accomplished by making a Y-shaped incision and suturing it into a V-shaped form. An incision 4 or 5 inches long, 2 or 2½ inches of which are on the duodenum and 2 or 2½ inches on the stomach wall, is made as in the ordinary pyloroplasty, after which the stomach end of this incision is carried for a short distance in two diverging directions, making the arms of the Y. These arms diverge at any required angle—the more obtuse the angle the greater the width of the new pylorus. By bringing the apex of the wedge along the spread duodenogastric incision until it can be attached to the other end of the incision, the wedge gradually becomes wider and the result is a V instead of a Y.

52. **Probable Cause of Acute Poliomyelitis.**—Corn and cornmeal are here associated etiologically with anterior poliomyelitis. Grossman points out that there were more cases of infantile paralysis in Iowa in 1910 than ever before in any one year. There was much more spoiled cornmeal and spoiled corn consumed by the people of the state the same year than ever before. In examining the diagrams of the towns where the disease was prevalent last year, the diagrams being drawn by expert physicians, and showing the residences of those who were stricken by the disease, Grossman could not conclude that the plat of the towns showed any evidence whatever that the disease is contagious. Here and there in different parts of the towns persons were affected, or perhaps in some families there may have been two persons thus affected. Therefore, he asks whether it does not look very much more as if some grocery might have had sour cornmeal, or spoiled corn in some other form, and the people in different parts of the towns and country used it.

Military Surgeon, Washington, D. C.

April

53 The Training of Sanitary Troops. P. F. Straub, U. S. Army.
54 Efforts, Accomplishment and Aim of the Ohio National Guard. J. A. Hall, N. G., Ohio.
55 The "Inactive" Medical Reserve Corps. H. C. Coe, U. S. Army, New York.
56 The Medical Department at Sea in Its Parallelism to the Construction and Administration of Naval Hospitals as Seen by a Fleet Surgeon. A. M. D. McCormick, U. S. Navy.
57 Duties of the Supervising Surgeon of a Naval Hospital. E. M. Shipp, U. S. Navy.
58 Practical Points in Diagnosis and Treatment of Asiatic Cholera. J. [illegible] P. H. and M.-H. S.
59 Contagion and [illegible] A. N. Collins, Minn. N. G.
60 Mental Disease [illegible] Services, with Special Reference to Dementia Præcox. L. L. Smith, U. S. Army.
61 Report of the U. S. Army Board for the Study of Tropical Diseases as They Exist in the Philippine Islands. W. P. Chamberlain, H. D. Bloombergh and E. B. Vedder, U. S. Army.

Illinois Medical Journal, Springfield

April

62 The Pioneer Period of Medicine in Illinois. O. B. Will, Peoria.
63 Hygiene in Schools. L. M. Bergen, Highland Park.
64 *Raw and Pasteurized Milk and Milk Serums. E. Gudeman, Chicago.
65 *A Sanitary Milk Supply for Cities from a Medical Standpoint. R. A. Black, Chicago.
66 Heredity in Cancer. H. W. Abelmann, Chicago.
67 *Two Insufficiently Appreciated Baths. B. Fantus, Chicago.
68 Real and So-Called Incontinence and Its Treatment. F. Kreissl, Chicago.
69 Carl Spengler's "I. K." Treatment. C. W. Leigh, Chicago.
70 *Prevention of Hemorrhage in Pulmonary Tuberculosis by Administration of Autogenous Vaccines. R. T. Pettit, Ottawa.
71 Two Cases Treated with the Vaughan Cancer Residue. F. L. Evans, East St. Louis.
72 Myopia of the Medical Profession. W. R. Allison, Peoria.
73 Appendicitis from a Medical Standpoint. E. E. Sargent, Le Roy.
74 Syphilitic Evidences in the Rectum. C. J. Drueck, Chicago.

64. **Milk and Milk Serums.**—Gudeman is convinced by the results of his experiments that if a milk-supply is to be protected for the benefit of the public health, real pasteurization is not sufficient, and commercial pasteurization, much less so. Sterilization is a much better safeguard (home sterilization)—even with is effects on the milk, change in character as to taste and possible effect on ratio of digestibility. It is fully as necessary to protect and watch sterilized milk

as raw milk, and pasteurization, *per se*, Gudeman says, is only protection for the benefit of manufacturers and vendors of pasteurizing machinery. Cleanliness is the most necessary, most essential and most efficient requirement in the production and distribution of milk. Milk should be watched and protected against contamination of all kinds, from cow to consumer, both inside and outside of the containers used in its distribution. Raw milk, spoiling and becoming "sour" within a short time, condemns itself and the acid-forming germs are the safeguards, indicating to the consumer the age, that is, the actual condition of the milk. Acid-forming germs do not increase the toxicity of the milk; just the contrary. Pasteurized milk, unless as fresh as the raw milk, can be and often is the cause of an infinite number of troubles, the absence of "souring" being a false indication of security. Sterilized milk is a safe milk, being free from living germs and free from toxic substances due to their decomposition, although also free from the living active germs necessary for a complete and perfect digestion of the milk, under normal conditions. Clean, raw milk comes first; thereafter Gudeman's choice is sterilized milk, fresh or canned, but if one is compelled to use commercially pasteurized milk of unknown origin and uncertain age, he would practice self-protection and boil the milk before consumption. Commercial pasteurization is a poor makeshift, a premium offered for the distribution of old, dead, stale and often unwholesome, dirty milk. Pasteurization, he asserts, deteriorates clean milk.

65. **A Sanitary Milk-Supply.**—Instead of contending and temporizing with improper pasteurization, or pasteurization of improperly procured milk, or improper care of pasteurized milk, Black would demand and work for pure, clean milk. Work with the dairyman to have him produce it, work with the general public to keep it so after receiving it, and last, but not least, occasionally remind our own profession of the important place they have in this battle.

67. **Unappreciated Baths.**—The effervescent bath and the continuous bath are discussed by Fantus and their more frequent use is urged.

70. **Prevention of Hemorrhage.**—Since June 15, 1909, Pettit has administered autogenous vaccines to eighty-four patients with pulmonary tuberculosis. Of these eighty-four, sixty-five were under observation two months or longer. It has been observed during the past nineteen months, that hemorrhages have been less frequent than before. The class of patients, diet, exercise, sleeping conditions, supervision, etc., were practically the same as in preceding years; the only new factor introduced into the treatment was the administration of autogenous vaccines. It has occurred to Pettit that possibly the injection of vaccines against the organisms of mixed infection had a protective action against tissue dissolution and hence against hemorrhage. In all cases considered in the class receiving vaccines at least three doses of vaccine were administered. In thirty-two cases vaccines were made from organisms isolated from the sputum. In twenty-two cases vaccines were made from organisms isolated from the blood-stream. The percentage of hemorrhage in individuals receiving vaccines was approximately ⅓ of that in persons not receiving vaccines. The percentage of hemorrhage in those treated with vaccines made from organisms isolated from the sputum is very much lower than it is in individuals treated with vaccines made from organisms isolated from the blood. The results shown in patients showing hemorrhagic tendencies are suggestive of the protective effect of the vaccines. Pettit regards the administration of autogenous vaccines justifiable in a large number of cases as a protective measure in the same way typhoid inoculations are used in the prevention of typhoid.

United States Naval Medical Bulletin, Washington, D. C.

April

75 Intravenous Administration of Salvarsan. G. B. Trible and H. A. Garrison, U. S. Navy.
76 Satisfactory Results with a Simplified Wassermann Technic (Emery). E. R. Stitt, U. S. Navy.
77 Preparation of a Culture Medium from a Dried Blood-Serum. E. W. Brown, U. S. Navy.
78 Existence of Anchylostoma Duodenale in Guam. W. M. Kerr, U. S. Navy.
79 Intestinal Parasites Found Among the Crew of the U. S. S. *South Dakota*. E. G. Parker, U. S. Navy.
80 Examination of Filipino Mess Attendants for Intestinal Parasites. W. A. Angwin and C. B. Camerer, U. S. Navy.
81 Practical Use of Carbon Dioxid Snow as Seen at the West London Hospital. G. D. Hale, U. S. Navy.
82 Nomenclature for Causes of Physical Disability in the Navy. C. N. Fiske, U. S. Navy.
83 An Atypical Typhoid Bacillus. O. J. Mink, U. S. Navy.
84 Parasites Found at Animal Autopsies in the Naval Medical School Laboratories During 1910. C. S. Butler and P. E. Garrison, U. S. Navy.
85 An Intestine Tray for Necropsies. P. E. Garrison, U. S. Navy.

Colorado Medicine, Denver

April

86 Causes and Treatment of Chronic Backache. G. B. Packard, Denver.
87 *An Unusual Powder Smoke Fatality. C. Johnson, Montrose, Colo.
88 Congenital Bony Atresia and Choana. F. L. Dennis, Colorado Springs, Colo.
89 *Non-Diabetic Glycosuria. S. Ringolsky, Denver.
90 A Case of Bilateral Sarcoma of the Adrenals. O. M. Gilbert and R. C. Whitman, Boulder, Colo.

87. **An Unusual Powder Smoke Fatality.**—On Jan. 16, 1911, a blast was set off in the Gunnison Tunnel at 2:30 in the afternoon. The men at work retired to a safe distance, as they had done several times daily for many weeks, to allow the smoke to clear away. In less than three days nine of a bunch of thirteen men who inhaled the smoke died of acute pulmonary trouble. A like disaster had never been heard of by engineers in charge of the work. There were many old miners among the men who were working in the tunnel, and none of them had ever known of a similar occurrence. An analysis of the circumstances by Gilbert and Whitman seems to show that the cause of the deaths was the inhalation of nitrous fumes, particularly of ntirogen tetroxid or dinitryl, N_2O_4, and that these fumes were formed by the action of the electric power current on the smoke from the burning powder. Although no record can be found of the formation of dinitryl in this manner, sufficient has been written on the subject to show the entire reasonableness of this explanation. When nitric acid is exposed to the air or is brought into contact with organic matter or metals it is partly volatilized and partly decomposed, and the oxids of nitrogen are formed, particularly nitrogen tetroxid, N_2O_4, also called dinitryl or nitrogen peroxid. The simpler and less poisonous form of this gas is NO_2 or nitryl. It will be shown that nitryl, NO_2 was present in the smoke. Only the action of the electric current could then be necessary to convert it into its allotropic or nascent form N_2O_4, or dinitryl. Johnson cites briefly the history of each of the thirteen cases. He calls attention to the possibility that some of the rapidly fatal cases of pneumonia to which miners are subject may be due to dinitryl.

89. Also published in the *Denver Medical Times* and *Utah Medical Journal*, April, 1911.

Journal of the American Public Health Association, Columbus, Ohio

March

91 *Report of Committee on Education of the Public as to the [illegible] Prevention of Gonorrhea and Syph- [illegible] ishington, D. C.
92 *V [illegible] the U. S. Navy for the Benefit of [illegible] C. N. Fiske, U. S. Navy.
93 *Venereal Diseases Among Seamen of the Merchant Marine. J. W. Kerr, U. S. P. H. and M.-H. S.
94 *A Plea for Applying the Usual Methods of Preventive Medicine to Venereal Diseases. J. R. Kean, U. S. Army.
95 Bacterial Content of Separator Cream and Separator Milk. P. G. Heinemann and E. Class.
96 Epidemiology of Diphtheria, Scarlet Fever and Measles. H. W. Hill.
97 Importance of the Registration of Marriage Certificates. F. W. Shumway, Lansing, Mich.

91 to 94. Abstracted in The Journal, Sept. 24, 1910, p. 1136.

Archives of Internal Medicine, Chicago

April

98 *Blood-Pressure in Tuberculosis. H. Emerson, New York.
99 Pyrogenic Action of Salt Solutions in Rabbits. H. F. Helmholz, Chicago.
100 Retention of Alkali by the Kidney with Special Reference to Acidosis. H. M. Adler, Hawthorne, Mass., and G. Blake, Boston.
101 *Effects of Certain Internal Secretions on Malignant Tumors. G. L. Rohdenburg, F. D. Bullock and P. J. Johnston, New York.
102 Duration of Trypanosome Infections. J. L. Todd, Montreal, Canada.
103 *Pathologic Anatomy of the Human Thyroid. D. Marine and C. H. Lenhart, Cleveland, Ohio.

104 *Studies on Water Drinking. S. A. Rulon and P. B. Hawk, Urbana, Ill.
105 *Use of Digipuratum in Heart Disease. W. F. Boos, L. H. Newburgh and H. K. Marx, Boston.
106 A Case of Strongyloides Intestinalis with Larvæ in the Sputum. J. G. Gage, New Orleans.

98. **Blood-Pressure in Tuberculosis.**—A complete study was made by Emerson of the status of the blood-pressure in tuberculosis. He says that hypotension or subnormal blood-pressure is universally found in advanced pulmonary tuberculosis, in which condition emaciation may play a part in its causation. Hypotension is found in almost all cases of moderately advanced tuberculosis, or in early cases in which the toxemia is marked, except when arteriosclerosis, the so-called arthritic or gouty diathesis, chronic nephritis, or diabetes complicate the tuberculosis and bring about a normal pressure or a hypertension. Occasionally the period just preceeding hemoptysis or during hemoptysis may show hypertension in a patient whose usual condition is that of hypotension. Emerson emphasizes that hypotension should be sought for as carefully as it is the custom at present to search for pulmonary signs. Hypotension when found persistently in individuals or families or classes living under certain unhygienic conditions should put us on guard aganst at least a predisposition to tuberculosis. Hypotension, when it is present in tuberculosis, increases with an extension of the process. Recovery from hypotension accompanies arrest or improvement. Return to normal pressure is commonly found in those who are cured. Continuation of hypotension seems never to accompany inprovement. Prognosis, Emerson found, can as safely be based on the alteration in the blood-pressure as on changes in the pulse or temperature.

Emerson believes that the causes of low blood-pressure in tuberculosis are probably primarily a toxic action on the vasomotor center in the medulla, allowing of a vasoparesis or stimulating an active vasodilatation. and secondarily, progressive cardiac atrophy or degeneration. Rapid heart action is a usual and necessary sequel to low blood-pressure and will, if extreme, aggravate the hypotension by the very act of its shortened diastole. It has been suggested, but not proved, that lack of vagus inhibition owing to pressure by enlarged bronchial lymph nodes and presence of sympathetic excitation from similar or reflex causes such as pulmonary or gastric irritation, are responsible for the tachycardia and hypotension. Marked vasomotor irritability is recognized as a frequent phenomenon in pulmonary tuberculosis and is supposed to result in tachycardia and hypotension, but it is not easy to see exactly what is meant by this term unless a certain functional instability, for which we have no proof of any definite local cause. The result of hypotension in tuberculosis or in any other condition is insufficient capillary pressure, more or less venous stagnation and insufficient nourishment, with resulting atrophy or degeneration of the essential organs of the body.

Emerson emphasizes that the treatment of tuberculosis in all its stages should take into consideration the need of assisting in every way the return to normal blood-pressure, first by relieving the relaxed vessels of the load put on them during the vertical position or exercise, and later by assisting the heart by abundant nutrition, moderate exercise and the stimulating effect on cardiac and vascular tone of cold fresh air, to meet the extra work put on it by the loss of vascular tone. Thus will the heart be able to maintain its normal bulk and strength or even to gain from the atrophy or small size of the early disease, to a normal size, so that the brain, kidneys, lungs and body at large may be properly nourished, until the disease is arrested and the toxic products of the tubercle bacillus are no longer distributed from the site of the lesion.

101. **Effects of Internal Secretions on Tumors.**—Briefly summarizing their evidence, the authors point out that: (1) removal of certain glands (i. e., thyroid, thymus and testes) appears to decrease the susceptibility to cancer; (2) removal of single glands or combination of glands in immune animals leads to lessened immunity to cancer; (3) extracts of thymus, thyroid, spleen, pancreas, pituitary and testes on injection tend to increase immunity against cancer and extracts of certain other tissues produce like effects; (4) similar extracts, on injection in cancerous organisms, alleviate pain, reduce tumors or even cause them to disappear; and finally (5) their results, combined with those of other observers, tend to the conclusion that many tissues contain some common element, possibly of the nature of a hormone, which is capable of producing immunity.

103. **Pathologic Anatomy of the Human Thyroid Gland.**—The classification of the thyroid diseases made by Marine and Lenhart is as follows:

I. Normal thyroid.
II. Active hypertrophies and hyperplasias (goiter).
  1. Developing from the normal thyroid.
  2. Developing from the colloid gland (goiter).
III. Colloid glands (goiters).
IV. Regeneration (hyperplasias).
V. Atrophies:
  1. Premature atrophies:
    (a) of obsesity.
    (b) of cretinism.
    (c) of myxedema.
  2. Senile.
VI. Degenerations:
  1. Hyaline.
  2. Amyloid.
  3. Calcareous, etc.
VII. Inflammations:
  1. Acute thyroiditis.
  2. Chronic thyroiditis.
VIII. Tumors:
  1. Benign.
    (a) Fetal adenoma.
    (b) Simple adenoma.
  2. Malignant.
    (a) Carcinoma from fetal adenoma (carcinoma simples).
    (b) Glandular carcinoma.
    (c) Sarcoma.
    (d) Endothelioma.
IX. Complications:
  1. Hemorrhage.
  2. Cyst formation.
    (a) From hemorrhage.
    (b) From fetal adenoma.

Thus, there are nine major anatomic divisions, which represent different physiologic or pathologic stages. The first four divisions, viz., normal thyroid, active hypertrophy or hyperplasia, colloid gland and regeneration, are physiologic. The remaining five divisions are properly designated as pathologic and are only the generally accepted groupings common to all body tissues.

104. **Water Drinking.**—Three experiments are described by Rulon and Hawk in which the topic under investigation was the influence of copious water drinking between meals on the excretion of chlorids. The subjects were young men ranging in age from 22 to 29 years. Each experiment was divided into three periods, a preliminary period during which nitrogen equilibrium was attained through the feeding of a uniform ration of low water content, a water period during which the uniform ration was supplemented by the drinking of large volumes of water between meals, and a final period in which the conditions of the preliminary period were in force. In two of the experiments there was a pronounced increase in the output of chlorids in the days of added water intake with a return to normal during the final period. This augmented excretion of chlorids is interpreted as indicating that the large volume of water ingested during this period has markedly stimulated the secretion of gastric juice. The excess hydrochloric acid thus passed into the intestine has been reabsorbed and appears, at least in part, in the urine as ammonium chlorid. The main bulk of the increase in the chlorid excretion they believe to have originated in this way. The flushing of the tissues and the stimulation of protein catabolism brought about by the copious water drinking may have been contributing forces in causing the increased output of chlorids observed. In one experiment there was a small increase in the chlorid output on each day of increased water ingestion followed by a pronounced rise in the output on the first day following the water period. Neither the flushing properties of the water nor its stimulating efficiency as regards protein catabolism or gastric secretion offers a satisfactory explanation for the high chlorid concentration observed on the day following the period of copious water drinking.

105. **Digipuratum in Heart Disease.**—Digipuratum has now been in use at the Massachusetts General Hospital for over a

year, and more than 180 cases of primary heart disease or secondary cardiac involvement have been treated with it. The effect on the urinary output has been very prompt in most instances. There was not a single case of vomiting or diarrhea. In fact, the vomiting of a number of cardiac patients at entrance was promptly stopped by digipuratum. Cumulative poisoning has never been observed. One of the early patients, a boy of 16, was given 106 tablets in six weeks: at no time was there any suggestion of digitalis poisoning. In one or two instances the house officers were made uneasy by sudden drops of 40 or more beats in the pulse-rate, but no disagreeable consequences followed in any case. It must be borne in mind, however, that digipuratum is a digitalis preparation, and that as such it must necessarily have a tendency to produce poisoning by cumulation. In the case of digipuratum this tendency is merely much diminished, so that it is possible by means of this drug to push digitalis therapy in a manner heretofore unknown.

Southern California Practitioner, Los Angeles

April

107 Fracture of the Skull with Intracranial Injuries. C. E. Zerfing, Los Angeles.
108 Necrosing Mastoid, Without Involvement of the Antrum, Middle or Internal Ear. Fatal Acute Suppurative Otitis Media of Two Days' Duration in an Adult. Persistent Bleeding Following Adenoid Operation. E. W. Fleming, Los Angeles.
109 Liver Abscess with Tertian Malaria. O. I. Towner, Los Angeles.
110 Overeating and Its Consequences. B. Reed, Alhambra, Cal.

Laryngoscope, St. Louis

March

111 Manifestations of Thyroid Disease in the Upper Respiratory Tract. B. R. Shurly, Detroit, Mich.
112 Bone Cyst of the Ethmoid Cells. J. A. Thompson, Cincinnati.
113 A Case of Sarcoma of the Tonsil in a Young Child. L. C. Cline, Indianapolis.
114 Erysipelas of the Larynx. D. B. Delavan, New York.
115 Clinical Studies of Five Cases of Suppurative Labyrinthitis. P. D. Kerrison, New York.
116 A Set of Antral Cannulas. J. Dunn, Richmond, Va.
117 A Non-Caustic Cresol (Cresatin) in Diseases of the Nose, Throat and Ear. M. D. Lederman, New York.
118 A Speculum for the Direct Examination and Treatment of the Naso-Pharynx and Eustachian Tubes. S. Yankauer, New York.
119 Electric Laryngeal Mirror Heater. J. D. Heitger, Bedford, Ind.
120 *A New Tongue Depressor. D. W. Layman, Indianapolis.
121 Two Well-Known Tonsil Dissectors Mounted in Convenient Form on a Single Handle. C. M. Harris, Johnstown, Pa.

120. **A New Tongue Depressor.**—The tongue depressor devised by Layman is intended especially for operative work under a general anesthetic, when the tongue is held by an assistant. The instrument conforms readily to the shape of the floor of the mouth, when the tongue is depressed, holding the tongue firmly downward and forward. The handle is so constructed that it affords a firm, non-slipping grip. There is a groove on the inner side of the upper part of the handle, in which rests the index finger, and below the groove the handle is obliquely fluted. The handle is set at an obtuse angle from the rest of the instrument so that it is out of the way of the patient's chest. The part of the mouthpiece that joins the handle is so shaped that it overrides the teeth easily; the drop or downward curve at the end, which joins the tip, is so placed that it permits a free forward or backward placement of the instrument. One size tongue depressor serves for both adults and children. The tip is nearly triangular in shape, and is serrated on the tongue sides and curves down just enough to conform to the shape of the depressed tongue. The downward drop of the tip gives an advantage of at least an inch or more over the ordinary right-angled tongue depressor; thus the tongue is held in the desired position with less effort. It does not obstruct the view of the operative field, and is out of the way of other instruments.

Journal of Biologic Chemistry, Baltimore

April

122 The Determination of Alkylamines Obtained from the Urine After Kjeldahl Digestion. C. C. Erdmann, Waverly, Mass.
123 The Recovery of Adenin. G. DeF. Barnett and W. Jones, Baltimore.
124 The Combined Action of Muscle Plasma and Pancreas Extract on Glucose and Maltose. P. A. Levene and G. M. Meyer, New York.
125 General Metabolism with Special Reference to Mineral Metabolism in a Patient with Acromegaly Complicated with Glycosuria. F. Medigreceanu and L. Kristeller, New York.
126 Presence of Histidin in Pig Thyreoglobulin. F. C. Koch, Chicago.
127 Fate of Benzoylacetic Acid in the Animal Body. H. D. Dakin, New York.
128 Nucleases. W. Jones, Baltimore.
129 Catabolism of Phenylalanin, Tyrosin and Their Derivatives. A. J. Wakeman and H. D. Dakin, New York.
130 The Chemical Nature of Alkaptonuria. H. D. Dakin, New York.
131 Researches on Purins. C. O. Johns, New Haven, Conn.
132 Physiologic Agents Concerned in the Nuclein Fermentation, with Special Reference to Four Independent Desamidases. W. Jones, Baltimore.

Journal of Infectious Diseases, Chicago

April

133 Investigations on the Purification of Boston Sewage. C. E. A. Winslow and E. B. Phelps, Boston.
134 *Liver Broth: A Medium for the Determination of Gas-Forming Bacteria in Water. D. D. Jackson and T. C. Muer, Brooklyn, N. Y.
135 Guinea-Pig Test of the Virulence of Diphtheria Bacilli. P. G. Weston and J. A. Kolmer, Philadelphia.
136 *Variations in the Phagocytic and Coccidal Power of the Blood in Pneumonia and Scarlet Fever. R. Tunnicliff, Chicago.
137 Fusiform Bacilli and Spirilla. R. Tunnicliff, Chicago.
138 *Transmission of Spotted Fever by Other than Montana and Idaho Ticks. M. B. Mayer, Chicago.
139 Complement Deviation in Rocky Mountain Spotted Fever. B. F. Davis and W. F. Petersen, Chicago.
140 *Time Relationships of the Wood-Tick in the Transmission of Rocky Mountain Spotted Fever. J. J. Moore, Chicago.
141 Technic for the Inoculation of Bacteria and Other Substances into Living Cells. M. A. Barber, Kansas City, Kan.
142 The Number of Cellular Elements in Milk. R. S. Breed and I. R. Stidger, Meadville, Pa.
143 Institutional Dysentery. G. F. Dick, Chicago.

134. **Determination of Gas-Forming Bacteria.**—For those observers who desire to determine the presence of all gas-formers, including *B. coli*, to the highest accuracy, the use of liver broth is recommended by Jackson and Muer. In the examination of water, dilutions of 0.1, 1.0 and 10 c.c. of the sample may be inoculated into lactose bile and another series into liver broth. Positive tests in the lactose bile indicate the degree of recent pollution with the colon group. Gas formation in the liver broth indicates the degree of contamination with gas-forming bacteria, both attenuated and vigorous. Any difference in the results obtained in lactose bile compared with those found by transplanting within twelve hours from the liver broth into a second set of lactose bile tubes gives a fairly accurate idea of the amount of attenuated *B. coli* present. Negative results in both sets of bile tubes and positive results in the liver broth usually show that the gas-producing bacteria present are not of the colon group.

136. **Blood in Pneumonia and Scarlet Fever.**—The observations recorded by Tunnicliff indicate that, as a rule, there is an increase in the phagocytic power in the leukocytes in mild cases of pneumonia. In mild and uncomplicated cases of scarlet fever, there is no change in the phagocytic activity of the leukocytes. In severe cases of pneumonia and scarlet fever, the phagocytic power of the leukocytes is generally diminished during the height of the disease, but when the patient improves, it rises above normal, to which it returns during convalescence. Although the opsonic power of the serum is specific, there is no such specificity in the phagocytic power of the leukocytes, so far as Tunnicliff's results indicate. So far as pneumonia and scarlet fever are concerned, variation in the opsonic power of the serum and in the phagocytic activity of the leukocytes, as a rule, is accompanied by a corresponding variation in the pneumococcidal or streptococcidal power of the serum and the leukocytes.

138. **Transmission of Spotted Fever.**—From Mayer's experiments it appears that in so far as ability of ticks from various regions to transmit the virus of spotted fever is concerned, the disease might find favorable conditions for its existence in localities other than those to which it now is limited.

140. **Time Relationship of Wood-Tick in Spotted Fever.**—The minimum duration of feeding necessary for a tick to infect a guinea-pig, Moore found to be one hour and forty-five minutes. The average time necessary seems to be about ten hours, while twenty hours were almost constantly infective. The duration of feeding necessary to infect a tick is approximately twenty-five hours, while the minimum incubation period in the tick was not definitely determined. With ticks obtained

from Nature it is necessary to infect the tick, and the incubation period in the tick will be found to be much less than is indicated here.

143. **Primary Vaccinations.**—*This is a strong endorsement of vaccination, which Amesse says is the safest, simplest and most potent specific prophylactic in the field of preventive medicine.* Of itself, it is essentially harmless; the infections sometimes complicating the operation are due to faulty technic on the part of the physician or unclean handling on the part of the patient. The plain duty of the profession, therefore, is to advocate, in season and out of season, early vaccination, preferably during the first years of life, and again at the age of 12. *Compulsory health laws of this character,* while apparently antiquated and oppressive, must continue to be *enforced* so long as public sentiment, in purely medical affairs, questions or denies the deductions of large experience and ripe judgment.

Denver Medical Times and Utah Medical Journal, Denver

April

144 *Conclusions from 30,000 Primary Vaccinations. J. W. Amesse, Denver.
145 Chronic Otitis Media and Its Treatment by the Radical Mastoid Operation. J. J. Pattee, Pueblo, Colo.
146 Prevention of Typhoid. W. T. Hasler, Lehi, Utah.
147 *A Mild Case of Typhoid. R. J. Smith, Logan, Utah.*

West Virginia Medical Journal, Wheeling

April

148 Modern Surgery of the Kidney. J. Ransohoff, Cincinnati.
149 *Extra-Uterine Pregnancy.* O. F. Covert, Moundsville.
151 *Diseases of the Accessory Sinuses,* with Reference to the Eye, Ear, Nose and Throat. *J. McK. Sites, Martinsburg.*
152 Local Use of Magnesium Sulphate. B. B. Wheeler, McKendree.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

April

153 *Falling of the Humerus Associated with a Dislocation of the Shoulder and Paralysis of the Arm. T. T. Thomas, Philadelphia.
154 An Extramedullary Tumor of the Spinal Cord, Apparently Caused by Trauma. *D. Bovaird, Jr., and M. G. Schlapp,* New York.

153. **Falling of the Humerus.**—*In 1879, Jonathan Hutchinson* reported a case under the title of "An Incomprehensible Case of Arm Paralysis with Recurring Dislocation of the Shoulder." Thomas has seen three cases of what he believes to be essentially the same condition. He attempts to show that it is only a variation of the ordinary anterior dislocation of the shoulder, and that paralysis is the result of the displacement in the joint, not of actual nerve rupture, although the latter condition may occasionally be present. He believes that the *importance of the lesion of a dislocation of the shoulder and its analogous condition, a sprain, has not been appreciated in the* etiology of obscure brachial paralyses. For the sake of brevity, Thomas proposes the name "dropped shoulder" or "dropped humerus" *for this condition, because* according to his experience it is the distinguishing feature and the primary and underlying cause of the whole trouble. He believes that it is the result of the tearing away from the humerus of the attachments of the upper part of the capsule with or without those of the external rotators from the greater tuberosity which is in the upper part of the joint. All three of his cases were apparently the result of an anterior dislocation, which was associated with a downward displacement of the humerus, but had not the usual rigidity of a dislocation. By operation in such cases, the normal joint relation can be restored, and the operation can be followed by a complete or almost complete return of function in the paralyzed muscles. Such a result was obtained in two cases, the operation being performed in one case eight weeks and in the other five weeks after the accident which caused the trouble. How long after this accident the result can be obtained remains to be determined. *There is* some reason to hope that the paralytic dislocation of the *shoulder* ascribed to poliomyelitis and to injuries of the brachial plexus at birth may be due to a similar cause, and that by early operation a cure may be obtained.

Cleveland Medical Journal

March

155 Untoward Results of Delayed Operations and of Incomplete Operations. A. Primrose, *Toronto,* Canada.
156 The Mental Hospital of the Future. H. H. Drysdale, Cleveland
157 Relation of Pharmacology to Clinical Medicine. W. deB. MacNider, Chapel Hill, N. C.
158 Ointments and Their Therapeutic Use. *W. T. Corlett,* Cleveland.
159 Ointments. L. C. Hopp, Cleveland.
160 Eight Cases of Fatal Meningeal and Cerebral Complications of Suppurative *Ethmoiditis. J. A. Stucky,* Lexington, Ky.
161 A Juvenile Case of Paresis. T. Diller, Pittsburg, Pa.

Alabama Medical Journal, Birmingham

April

162 Is *Anything the Matter with the Physician?* W. J. Robinson, New York.
163 The *Fermental Form of* Summer *Diarrhea* of Infants. W. W. Harper, Selma.

Canadian Medical Association Journal, Toronto

April

164 *A Study of 850 Cases of Scarlet Fever,* with a More Particular Consideration of Seventy-One Fatal Ones. J. McCrae, Toronto.
165 Duodenal Ulcer. W. H. Rankin, *Montreal.*
166 Human Bacillus-Carriers. W. T. Connell, Montreal.
167 Mounting Moist Specimens. E. L. Judah, Montreal.
168 Social Problems in Relation to Medicine. R. Monahan, *Toronto.*

Journal of the Kansas Medical Society, Kansas City

April

169 Injuries to the Abdominal Viscera, Produced by Indirect Violence: A Plea for Early Operation. G. M. Gray, Kansas City.
170 Art and Science in the *Practice of Medicine.* W. A. Carr, Junction City.
171 *Rheumatism.* J. Dillon, Eureka.
172 Gunshot Wounds of the Abdomen. H. L. Snyder, Winfield.
173 *Tonsil Operations. J. E. Sawtell, Kansas City.*

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial *foods are omitted unless of exceptional general interest.*

British Medical Journal, London

April 1

1 *Acute Emergencies of Abdominal Disease. B. G. A. Moynihan.
2 Chemical Composition and Mode of Formation of Renal Calculi. B. Moore.
3 Examination of Suspected Small-Pox. A. F. Cameron.
4 *Renography, or Study of Abnormal Movements of Living Kidney. *E. H. Fenwick.*
5 Anthrax and Fatalism. W. Mitchell.
6 The Infective Granule in Certain Protozoal Infections, as Illustrated by the Spirochetosis of Sudanese Fowls. A. *Balfour.*
7 *The Therapeutics of Sugar. J. Sawyer.

April 8

8 *Heart Failure. J. Mackenzie.
9 Antivivisectionists and the Research Defence Society. E. Schäfer.
10 Medicolegal and Practical Considerations of Melancholia. G. M. Robertson.
11 Etiology of Iritis. T. H. Butler.
12 Common Diseases of the Eyes. H. P. Bennett.
13 Mechanical Etiology of Optic Neuritis. M. Mamourian and C. J. Smith.
14 Salvarsan in Syphilis. C. Gibbs and E. S. Calthrop.

1. **Acute Emergencies of Abdominal Disease.**—The catastrophes which occur within the abdomen are not, Moynihan says, strictly speaking, "acute;" they are, on the contrary, usually the result of the abrupt transition from a quiescent to an acute phase in a disorder of long standing. An acute emergency can, therefore, be prevented by a timely recognition *of the value and the significance of the early symptoms,* so often ignored or misunderstood, of the chronic malady in which it is the final development. The sudden occurrence of an attack of intolerable agony in the abdomen, associated with tense rigidity of all the abdominal muscles, indicates that there is an acute lesion which needs immediate surgical attention. These two signs, and these alone, are an urgent warrant and compulsion to treat the case at once by operation. *A differential diagnosis is generally possible if strict* attention be paid to the details of the history, and if the firm abdominal wall be searched for a tender area of supreme resistance. Shock is not a symptom of perforation, for in the early hours after this disaster has occurred the pulse is very little altered in volume or in rate. In all cases *of abdominal pain,* especially in children, Moynihan says that the use of aperients should be avoided.

2. **Chemical Composition of Renal Calculi.**—Experimentation has convinced Moore that the formation of renal calculi has

for its basis a condition of diminished oxidation, in which there appear primarily calcium salts of incompletely oxidized bodies, such as calcium oxalate and calcium urate, associated with calcium phosphate. Further, such diminished oxidation, occurring locally or generally, is seen in many pathologic conditions, such as calcium salt deposition in bone in old age, in tuberculous lesions, in gout, in arteriosclerosis and generally in calcification processes in the body. The tendency toward such deposition increases with age, and is probably accompanied by an increased alkalinity of the body fluids.

3. **Renography.**—This is a report on a study of the abnormal movements of the living kidney, and a hint of its bearing and influence on renal surgery. Fenwick utilizes skiagrams of the kidney region made during forced inspiration, then forced expiration, and finally a combination of both with posture. The results are most striking, not only as bearing on the detection and study of the over-movable kidney, or in aiding in the detection and elucidation of false shadows, but in indicating the technic of operative procedure. The method is described in detail. Some of his findings he summarizes as follows:

> If I come across a fixed dense kidney, with profuse hematuria, I know I have to deal with a carcinoma of the kidney that has passed through its capsule, and has fixed it so that there is no use operating; that I shall not be able to get the kidney away without damaging the inferior vena cava or abdominal aorta, or without getting a rapid recurrence by opening up planes along which the malignant growth has interpenetrated.
>
> A fixed dense kidney shadow high up under the costal arch, with profuse, intermittent hematuria, means a "too-late" cancer, for it denotes a malignant kidney that has become glued, and is therefore inoperable.
>
> A fixed shadow of a dense kidney, with stinking pyuria and shadow of pelvic stones, means nephrectomy, and, if the surgeon is wise, subcapsular nephrectomy by the lumbar incision, without touching or separating more of the pericapsular attachments than is just necessary to enucleate the organ and control its pedicle. The surgeon who acts thus will not lose these severe cases.
>
> A fixed dense kidney shadow without stone but with *B. coli* pyuria or staphylococcus pyuria generally needs the simplest pelvic drainage through the loin without disturbance of the pericapsular area.
>
> A dense fixed kidney shadow with pyuria needs serum treatment for the corticitis.

6. **Therapeutics of Sugar.**—Sawyer has used cane sugar freely and frequently during the last ten years or so with success in a variety of morbid conditions. In wasting disorders, in various forms of anemia, in adynamic varieties of rheumatism, and especially in the neurasthenic manifestations of neurotic persons, he has found the continued ingestion of cane sugar markedly beneficial, increasing weight and power, appearing to act not merely as a nutrient but also as a tonic in the best senses of that word, gently stimulating the vital energies to an aroused action by a kind of mild stimulation, slowly produced and permanent in effect. For an adult, he has usually prescribed from ¼ to ½ pound of lump cane sugar, to be eaten slowly daily, a lump or two to be taken at odd times through the day or night, but not just before a meal, the patient always carrying a little store with him, and eating some of it when so disposed.

8. **Heart Failure.**—In this, the first paper in a series, Mackenzie considers particularly the inadequacy of the back-pressure theory to explain heart failure. He says that the theory of heart failure from back pressure lays stress on and magnifies the factors of little importance and ignores the essential factors in the production of heart failure. The back-pressure theory leaves out of consideration the fact that the valve lesion may be a steadily progressive one, and it omits the still more important fact that there are coincident changes going on in the structure of the heart muscle, impairing its efficiency, and leading up to the essential cause of heart failure. But most important of all, this back pressure theory has failed to recognize that the changes which have led directly to the production of heart failure and produced such symptoms as dyspnea, ascites, enlargement of the liver, are due to the sudden inception of a different rhythm in the heart's contraction by fibrillation of the auricle. He attempts to show that the accepted view of heart failure has been based on a misconception of the means by which it has been brought about and that certain phenomena associated with heart failure had attributed to them, in consequence of this association, a significance which they do not possess.

Lancet, London

April 8

15 *Heart Failure. J. Mackenzie.
16 *Two Hundred Cases of Total Enucleation of the Prostate. P. J. Freyer.
17 *Treatment of Pulmonary Tuberculosis with Bovine Tuberculin. N. Raw.
18 Acute Inflammation of the Thyroid. W. S. Robertson.
19 How Far Can the Abuse of Drugs be Prevented by Law? W. Gadd.
20 *An Unusual Case of Gunshot Wound of the Skull. W. L. Harnett.
21 *The Eye of Surgical Needles: A New Form. J. L. Thomas.

15. Also published in *British Medical Journal*, April 1, 1911.

16. **Total Enucleation of Prostate.**—In connection with these 200 operations cited by Freyer, there were nine deaths, or 4.5 per cent., the causes of death being as follows: 1. Five patients died from uremia: in two, aged 59 and 71 respectively, necropsy revealed extensive pyelonephritis; in two, aged 76 and 83, necropsy showed long-standing backward pressure changes (aseptic) leading to almost complete absence of secreting tissue in the kidneys, only a thin layer of cortex remaining; and in one, aged 73, the patient was suffering from an extreme form of paralysis agitans. 2. Two patients died from exhaustion. In one of these, in whom death occurred thirteen days after the operation, there were almost daily rigors with high temperature, though the bladder was clean; no doubt the kidneys were pyelonephritic, though no necropsy was obtained. The other, aged 87, had been confined to bed for six weeks from pneumonia immediately previous to operation. 3. One patient, aged 74, very stout, suffering from severe cystitis, chronic asthma and bronchial catarrh with dilated heart, succumbed from bronchitis twenty-two days after operation. Spinal anesthesia was tried in this case but failed, and general anesthesia had to be employed, which, no doubt, was responsible for the fatal bronchitis. 4. In a man, aged 78, double vasectomy and subsequently castration had been performed by another surgeon several years before, without any benefit to the prostatic symptoms. For two years before coming under Freyer's care he had passed urine through a suprapubic fistula established for this purpose. The apparatus fitted badly, owing to the bladder being filled by the enormous prostate, causing great pain and frequent hemorrhage, and urine constantly leaked beside the tube. Altogether the patient was in an extremely wretched condition, and begged to be relieved at any risk. The prostate, which weighed 11 ounces, was easily enucleated, but the patient succumbed to shock in eight days. Freyer calls attention to the fact that in all of these nine cases in which death supervened on the operation the patient was afflicted with one or more grave complications which must have proved fatal after much suffering. In no case did death ensue where the vital organs were sound at the time of the operation. Had the cases been selected, therefore, the mortality would have been *nil*.

17. **Pulmonary Tuberculosis and Bovine Tuberculin.**—After a large experience in the treatment of tuberculosis in all its forms, Raw has come to the firm conclusion that tuberculin is a valuable remedy in a great many cases. The special variety of tuberculin to be used must be determined by the nature of the infection, and as nearly all cases of pulmonary tuberculosis or "consumption" are of human origin—that is, they are caused by the bacilli of the human type—it is necessary to use a tuberculin prepared from the bacilli of the bovine type, and named bovine tuberculin. In fact, he declares, one must *inject* the opposite kind of tuberculin. Bovine tuberculin is less irritating and less liable to produce reaction when given in the larger doses in cases of consumption. Raw does not consider tuberculin a specific remedy in severe tuberculous infections; but combined with other methods of treatment, directed to raise the general nutrition, assists in producing immunity of a more or less temporary character, but its chief effect seems to be to prevent the further spread of the disease, and to inhibit the growth of the bacilli in the human tissues, so that as the original tuberculous process dies out no further development takes place. In other words, it has a specific action on the blood in retarding the growth of tubercle bacilli. The immunity which it produces must be arrived at slowly and with caution, so that the blood may be

very gradually accustomed to its presence, and it cannot be too strongly emphasized that all tuberculous infections of however mild a type become constitutional or blood infections in a very short time, as is evidenced by the skin reaction of v. Pirquet.

20. **Bullet Wound of the Skull.**—In the case reported by Harnett, a spent bullet penetrated the skull through the squamous portion of the temporal bone; passed between skull and dura without injuring the latter and lodged in the pars petrosa.

21. **Eye of Surgical Needles.**—The eye of the needle used by Thomas has a side entrance protected by a spring grip—like a harness snap.

Journal of Tropical Medicine and Hygiene, London

April 1

22 Experiments to Ascertain if the Domestic Fowl of Uganda May Act as a Reservoir of the Virus of Sleeping Sickness. Sir D. Bruce, A. E. Hamerton and H. R. Bateman.
23 Three Cases of Pseudomuscular Hypertrophy in One Family. R. H. Castor.

Journal of Obstetrics and Gynecology of the British Empire, London

March

24 *Sixteen Cases of Hebosteotomy from the Clinics of Berlin, Munich and Königsberg (Pr.). E. B. M. Haarbleicher.

24. **Hebosteotomy.**—Haarbleicher lays emphasis on the fact that to avoid disastrous risks hebosteotomy must be performed with a very exact technic, relatively early in labor, and in carefully selected cases, uncomplicated by any previous obstetric interference. He also states that the benefit to be expected in a subsequent delivery is, to say the least, problematical. Even after a strikingly successful operation and uneventful immediate recovery, the condition of the patient is not always enviable, especially in the case of a working woman who is compelled to return to her duties after a short convalescence. Thrombosis, prolapse, sacral pain, drag on evidently although the gait is relatively seldom disturbed. Statistics show that 80 per cent. of deliveries with contracted pelves are spontaneous, if left to Nature, but if hebosteotomy is not performed till the child is in danger, or till both mother and child have suffered by a protracted labor, the goal of the operation, a living child, is uncertain, and the mother incurs a grave risk.

In order to ensure a living child at minimum risk to the mother, hebosteotomy must be performed early in labor, and as no certain benefit can be claimed for future deliveries, it has no advantage over Cesarean section. Although the technic of the operation, as now developed, is brilliantly simple and exact, Cesarean section in equally skilled hands has never shown such a list of disasters. Cesarean section overcomes all mechanical difficulties, whereas in all pelvic enlargements these have still to be faced. The exact relation of the size of the head to that of the pelvis, the condition of the child, and resistance of the soft parts cannot be gaged with certainty. Injury to the bladder and soft parts, if avoided by the technic of the operation, may occur when the bones are pressed apart by the passage of the child's head and especially so if the delivery has to be aided by forceps or version. To avoid these disasters the patients must be selected so carefully that the field for hebosteotomy must remain a narrow one, viz.: multiparæ, with a conjugata of not less than from 7 to 7.5 cm. in a flat, or 8 cm. in a generally contracted pelvis, when a segment of the head has already entered the pelvis, and it is quite clear that only a very little increase in the pelvic measurement is required for the head to slip through easily, when the child has not been endangered by previous attempts at delivery, e. g., version, forceps or induction of premature labor, and when the mother is not infected. Even in these cases Cesarean section will be considered by many to hold the field.

Dublin Journal of Medical Science

April

25 Medical Inspection of Schools and School Children. J. B. Story.
26 Diagnostic Value of Luys' Segregator. R. A. Stoney.
27 Diagnosis of Renal Tuberculosis. C. P. Smyly.

Glasgow Medical Journal

April

28 Treatment of Pulmonary Tuberculosis in the Victoria Infirmary, Glasgow. A. Napier.
29 Two Cases of Aneurysm of the Splenic Artery. R. S. Taylor and J. H. Teacher.
30 *Treatment of Sciatica by Saline Injections. A. G. Hay.
31 The Protein Requirements of the Body. E. P. Cathcart.

30. **Treatment of Sciatica by Saline Injections.**—Of twelve patients treated by saline injections by Hay, eight were cured, one was made worse and three were lost sight of. With regard to the technic of the injection, Hay injects at the sciatic foramen or at the gluteal fold, according as pressure causes greater pain at the one point or the other. To find the foramen he draws imaginary straight lines from the posterior superior iliac spine to the tip of the great trochanter and to the middle of the ischial tuberosity, bisects the angle contained by these lines, and measures 2½ inches along the bisecting line. At the gluteal fold the nerve lies midway between the trochanter and the tuberosity. To ascertain whether the needle has penetrated into the nerve, press the plunger of the syringe gently so as to expel a few drops of the solution. If the needle is in the nerve the patient experiences a sensation as if something were trickling down within the leg to a variable distance, sometimes only to the middle of the thigh, sometimes as far as the heel. In evidence of the permanence of the cure, Hay cites the case of a man whom he injected eleven years ago. For several years before the man was treated, he was confined to the house with sciatica every winter for periods varying from a few days to many weeks; since being treated he has never lost a day's work.

Journal of Laryngology, Rhinology and Otology, London

April

32 The Question of Ozena. J. S. Fraser and F. E. Reynolds.

Clinical Journal, London

March 29

33 Bronchitis. J. E. Squire.
34 Some Common Forms of Deafness. W. H. Kelson.

Medical Press and Circular, London

April 5

35 Hyperthyroidism. R. Saundby.
36 Salvarsan in Syphilis. S. Taylor and R. W. Mackenna.
37 The Mechanism of Mental Processes, with Special Reference to Emotional Control. G. R. Jeffrey.
38 Self-Retaining Mastoid Retractor. C. A. Adair-Dighton.
39 *A New Form of Roentgen-Ray Penetrometer. F. Hernaman-Johnson.

39. **Roentgen-Ray Penetrometer.**—Hernaman-Johnson's procedure is based on the determination of a point at which a screen first became faintly illuminated. The essential part of his apparatus is a slide made in two pieces, numbered from 1 to 6 and from 7 to 12, and consists of squares of metal arranged according to thickness in geometrical progression. The rays from the focus tube on their way to the screen have to pass through this slide. As soon as a faint fluorescence becomes visible, it is the penetration number of the tube. Hernaman-Johnson has graded his instrument against a Wehnelt radiometer, so that the numbers correspond approximately to this scale.

Bulletin de l'Académie de Médecine, Paris

March 21, LXXV, No. 12, pp. 387-414

40 Graduated Mixed Anesthesia. (Méthode des mélanges titrés.) P. Reynier.

Presse Médicale, Paris

March 25, XIX, No. 24, pp. 229-244

41 *The Professional Responsibility of Physicians and Surgeons. A. Colin.
42 *Professional Responsibility in Induced Medical Abortion. E. Bonnaire.
43 *Induced Abortion. (De l'avortement provoqué.) H. Montal.
44 *The Rights of the Father of the Family Over His Children. (A propos du droit du père de famille sur ses enfants.) L. Picqué.

March 29, No. 25, pp. 245-252

45 *Diagnostic Importance of the Concentration of Urine. Significance of Polyuria. (Volume des urines et concentration maxima.) J. Heitz-Boyer and Moreno.

41-43. **The Professional Responsibility of Physicians and Surgeons.**—This issue of the *Presse Médicale* is devoted to articles bearing on this subject written by lawyers and physicians, with a discussion at a joint meeting of members of these professions.

43. Permission to Operate on Minors.—The French law gives the parents and guardians the right to forbid operations on minors and the insane, and Picqué cites examples to show the evils resulting from this law, as for instance when the father of a girl between 20 and 21 refused to permit the amputation of her leg on account of a sarcoma of the lower end of the femur, declaring that he preferred death to amputation for his daughter, notwithstanding the girl's agonized appeals for the operation. He also cites instances in which the family refused to permit a needed operation on an insane member of the family, their refusal often being dictated by sordid or criminal motives. Picqué describes his efforts to influence legislation to correct such deplorable conditions, but he has been unable to accomplish anything to date in this line.

45. Diagnostic Importance of Maximal Concentration of Urine.—Heitz-Boyer and Moreno distinguish between a facultative polyuria in which the increased amount of urine depends on conditions external to the kidney, such as the amount of liquid ingested, influence of diuretics, etc., and a true or obligatory form in which the kidney is unable to excrete the solids of the urine in greater concentration. In true polyuria a distinction must further be made between the total amount of solid substances eliminated and the concentration of the urine in these substances. The total amount of solids depends on the diet and is no criterion for appreciation of kidney functioning. The important factor, therefore, in the modification of diuresis is the maximal capacity for the concentration. This depends on the state of the kidney parenchyma, and it is thus an index of its permeability. The maximal concentration of urea, for instance, is a direct and reliable index of one of the principal functions of the kidney. For each individual there is a certain figure above which the kidney parenchyma is unable to eliminate the different substances of the urine; this figure is the maximal concentration for the substance in question. To make the test, the individual limits as much as possible the intake of fluids while ingesting as much as possible of the substance in question. In this way the kidney is forced to eliminate the maximum of the substance in the minimum of water, that is, in the most concentrated form. A healthy man given increasing amounts of urea eliminated from 40 up to 120 gm. of urea a day, but the urine never contained more than 4.5 per cent. of urea. This was his maximal concentration. In a case of nephritis, the patient taking 20 gm. of urea for four days and then 40 gm. for a day and then none, the maximal concentration ranged from 1.45 to 2.05 per cent. in the seven days of the test. The body has reserves of water to draw on, so that the concentration of the urine is regulated by physiologic laws. Much more water is ingested ordinarily than is actually needed for urine production, so that there is enough, even when the intake is much restricted below the ordinary, for production of urine. Instead of basing our diagnosis on the volume of urine in the twenty-four hours, which is such a variable and unreliable index, depending on so many casual factors, the authors declare that the diagnosis should be based on the maximal concentration which is an exact and scientific index of the actual functional capacity of the kidney in respect to solid substances. It is easier to estimate the maximal concentration of urea than that of salt, so that urea is generally used for the test.

Semaine Médicale, Paris

March 29, XXXI, No. 13, pp. 145-156

46 *Headache from Nodules in the Muscles. (La céphalée musculaire.) F. Rose.

April 5, No. 14, pp. 157-168

47 Standards for Registration of the Venous Pulse. (De la notation et de la lecture des tracés du pouls veineux.) L. Bard.

46. Muscular Headache.—Rose refers by this term to the pain caused by nodules forming in the muscles of the head and back of the neck. It is sometimes called chronic rheumatic headache or nodular and callous muscular cephalalgia. The lumps in the muscles can be palpated with the lubricated fingers. They may be in the subcutis or muscles and may range in size from minute points to actual lumps, and are extremely painful even under slight pressure, especially those in the top of the scalp. They pass through three stages, swelling, elastic resistance and cartilaginous induration, and the tonicity of the muscle is always exaggerated, sometimes to actual contracture. The points where the muscles are most painful are near the articulation of the sternum and clavicle and the upper cervical vertebræ, especially the fourth, and the articulation between the atlas and the spine. Light pressure at these points causes the muscles to contract, while strong pressure abolishes the pain and relaxes the muscles. This muscular headache has been studied mostly by Swedish writers. The rare acute cases subside under salicylic or sedative medication; even in the chronic cases the prognosis is also good under suitable massage treatment. Each of the hypertonic muscles should be examined individually. With scientific massage it is possible to relieve the patient speedily after the affection has been once diagnosed. Müller states that of 140 patients in this category who were given over twelve massage treatments, 119 were cured, while 21 were either not benefited or the ultimate outcome is unknown. The trouble is most frequent in women, but it has been encountered in children. There is usually a history of some toxi-infection, influenza, recurring sore throat, acute and chronic muscular or articular rheumatism. Some explain the nodules as gouty deposits; the *Muskelschwielen* may involve the nerves in the nodules. A rheumatic origin seems probable, but Müller noticed a tendency to goiter in a number of the patients. It is possible that the contraction of the muscles in the front of the neck may compress the thyroid and thus induce insufficiency and set up a vicious circle. This assumption throws light on the headache and facial and cranial neuralgias sometimes observed with defective functioning of the thyroid. Müller asserts that headache which cannot be traced to an organic affection of the brain, skull, eyes, nose or ear is sure to be of this muscular cephalalgic type. Even with alcoholism, the headache may be of this type and may be cured by massage, as also when it is a complication of neurasthenia.

Archiv für klinische Chirurgie, Berlin

XCIV, No. 4, pp. 711-972. Last indexed April 8, p. 1075

48 *Ileus with or Following Appendicitis. (Darmverschluss bei und nach Perityphlitis.) E. Ruge.
49 Arteriovenous Anastomoses Without Interruption of Circulation. (Anlegung arterio-venöser Anastomosen bei erhaltenem Blutkreislauf.) S. Hadda.
50 *Sarcoma of the Calcaneum. (Fusswurzelsarkome.) C. Stern.
51 Bone Plastics. (Beiträge zur freien Knochenplastik.) A. Stieda.
52 Resection of Left Lobe of Liver. N. Kron.
53 *Outcome of Operations on Stomach for Non-Malignant Disease. J. Galpern.
54 *Primary Resection of Large Intestine. (Zur Frage der primären Dickdarmresection.) H. v. Haberer.
55 Improved Technic for Suturing Tendons. (Einige Bemerkungen zur Technik der Sehnennaht. O. v. Frisch.
56 *The Toxic Behavior of Metallic Lead in the Tissues. (Das toxische Verhalten von metallischem Blei und besonders von Bleigeschossen im thierischen Körper.) L. Lewin.

48. Obstruction of the Intestine During or After Appendicitis.—Ruge reviews forty-four cases of this kind, including fourteen in which the ileus was due to atony of the bowel, ten with broad adhesions and eighteen with narrow, one with an inflammatory tumor and one with stenosis from ulceration in the cecum. These appendicitic cases formed 17.9 per cent. of the cases of ileus in his experience in the last twenty years, but only 1.8 per cent. of the total cases of appendicitis. The diagnosis is frequently difficult as the appendicitis may mask the ileus or there may be no known history of appendicitis or merely a vague history. In twenty-one cases nothing was known of any history of appendicitis or else it had been extremely mild. In twenty cases the ileus accompanied the appendicitis. Violent peristalsis is the best sign of obstruction, and when the obstruction is suspected a history of appendicitis existing or in the past should suggest the necessity for an immediate operation. The obstruction is generally high up and operative treatment must be more extensive than with simple mechanical ileus, on account of the danger from the appendicitis. Only ten patients recovered in the twenty with existing appendicitis and only thirteen in the twenty-four with trouble due to the relics of appendicitis. In the entire number there is no case in which an early operation was done for the appendicitis: this confirms the importance of an early operation to ward off such contingencies in the future.

50. **Sarcoma of the Calcaneum.**—Stern has encountered two cases; the patients were men of 54 and 28 and the growth was inoperable in the first case. In the other the trouble had been supposed to be of an inflammatory nature and a plaster cast was applied four weeks after the first symptoms. The increase in the pains compelled its removal in ten days when the ankle was found more swollen than at first and the patient refused to permit massage. The progress of the growth soon required amputation of the leg and the man died of metastasis in a few months. In the other eighteen cases on record, the sarcoma was mistaken for a tuberculous process in a number, but the difference in the shape of the joint might have excluded this. With tuberculosis, the joint assumes the spindle shape while this is not generally observed with sarcoma until the soft parts become involved, although in one of Stern's cases the spindle shape was pronounced from the first. The knobby tuberculous process is usually in the capsule, while with sarcoma it is more liable to be in or near the cartilage. So long as the sarcoma is restricted to the bone, the joint swelling shows a tendency to subside in most cases, but Stern's case was an exception to this rule likewise. With sarcoma, the skin is not reddened as with inflammation, and the movements of the joint are less painful, until the growth involves the joint surfaces. This does not occur for a comparatively long time as the cartilage seems to display great resistance to the spread of the sarcoma in most cases, although not in all. The pain with sarcoma is described as a pulling or tearing or neuralgic pain, while with inflammation it is more a throbbing. Fever, chills and local pains may come on suddenly as the first symptoms of the sarcoma. In some cases the pains and disturbances may be ascribed to flat-foot; this occurred in Borchardt's case, in which the patient was treated for nine years on this assumption and all kinds of insoles, massage, etc., having been applied. Radiography is extremely useful in differentiation of the sarcoma, the uniform light patch being different from the picture in tuberculosis and osteomyelitis with which there are generally shadows scattered through the light patch. The thickening and disintegration of the periosteum help in differentiating gumma from sarcoma, which otherwise the findings resemble. There is no time to waste, Stern says, in tentative antisyphilitic medication. Radioscopy is further useful with sarcoma as it permits discovery of metastases in the lungs or elsewhere before they make their presence felt, and it reveals the first tendency to recurrence after removal of the growth. With exploratory puncture or excision, the scrap should be taken from the periphery of the growth as the conditions differ materially at this point with gumma and sarcoma while in the center it is hard to distinguish between them. Before operating, the glands should be investigated; if they show signs of metastasis, there are probably metastases at other points. Of the twenty sarcoma patients two were known to be alive two years after removal of the spindle-cell and giant-cell sarcomas and one five years after removal of a sarcomatous chondroma. In Stern's two cases the growth was a small, round-celled sarcoma with occasional giant cells. The small, round-celled sarcomas seem most rapidly fatal. It is important after the amputation to saw the bone across to ascertain how far the sarcoma has proliferated up into the bone marrow; exarticulation of the knee or hip may be the preferable technic.

53. **End-Results of Operations for Benign Gastric Disease.**—Galpern has reexamined 128 of 160 patients of this class, and he here classifies them and the ultimate outcome, comparing this material with that reported from other clinics. The best results were obtained with cicatricial stenosis of the pylorus; next to this, in the cases of pyloric ulcers, while the poorest results were found with ulcers at other points in the stomach. In twenty-eight cases there was recurrence of symptoms or peptic duodenal ulcer developed.

54. **Primary Resection of the Large Intestine.**—Haberer reports nineteen cases of primary resection of the large intestine at von Eiselsberg's clinic at Vienna. Three of the patients did not survive the operation; one of this group had had a febrile sore throat a short time before and the fatal peritonitis was due exclusively to streptococci. He regrets that the operation was not postponed to allow time for the streptococcus infection to die out. In another similar case, although the patient recovered, yet streptococcus peritonitis followed the angina and streptococci could be cultivated from the blood. In the third case the patient was doing well up to the fifth day after extensive resection of stomach and intestine but then a suture on the ascending colon gave way. In all the other cases the wound healed by primary intention. Eiselsberg makes it a principle to use the simplest technic and ordinary instruments in all his surgical work, for the impression and effect on the students who, when they come to practice, will seldom have more than the most modest equipment.

56. **Poisonous Action of Metallic Lead in the Body.**—Lewin records a large number of interesting cases of lead poisoning from swallowed shot or the practice of holding shot in the mouth, or inhalation of air laden with lead particles, bullets shot into the tissues, etc., discussing the chemical action of the organic fluids on the lead. His conclusions are in favor of the necessity of extracting without delay the metal body which is liable to act sooner or later in an insidiously harmful way on the vital functions. He has been growing more pessimistic in this respect with increasing experience. No one can tell, he says, how soon the metal will become mobilized under chemical action, and when this has once happened it is practically impossible to control the consequences. The argument that people are known who have carried bullets about in them for years without harm is not based on scientific evidence, he declares. There are no records of any such persons followed carefully through years, and no records as to the symptoms with which death finally came to them. It is not known whether they died finally of lead poisoning or not. Internal medication, with potassium iodid for example, is inadequate to cope with the constant fresh supply of lead being fed into the blood from the mass in the bullet or shot. In one of his cases the symptoms of lead poisoning were observed from merely a single shot which had lodged between the teeth as the woman was eating an apple.

Berliner klinische Wochenschrift

March 27, XLVIII, No. 13, pp. 558-604

57 The Constitution and Pulmonary Tuberculosis. C. Hart.
58 *Intermittent Limping and Spinal Disturbances from Male Fern Poisoning. (Intermittierendes Hinken und Rückenmarkserkrankung nach Vergiftung mit Extractum filicis maris.) A [illegible]
59 *[illegible] for Estimating a[illegible] [illegible] Beurteilung u[illegible] culärer Erkrankungen in der [illegible] Commenced in No. 12.
60 *Functional Valvular Occlusion of Intestine in Infants. (Eine wichtige Form von funktionellem Darmverschluss im Säuglingsalter und ihre Beziehungen zur Hirschsprung'schen Krankheit.) E. Blochmann.
61 The Alleged Peroneus Paralysis from Salvarsan. (*Ueber angebliche Peroneuslähmung* durch Salvarsan.) W. Wechselmann.
62 Case of Fistula Between Gall-Bladder and *Appendix.* (Fall von Fistel zwischen Gallenblase und Wurmfortsatz.) T. Tanaka.
63 Technic for Puncture of the Brain. (Zur Technik der Hirnpunktion.) M Borchardt.
64 *Clinical Importance of Decapsulation and Scarification *of the* Kidney. M. Zondek.
65 Treatment of Leukorrhea. (Der vaginale Fluor und seine Behandlung.) E. Runge.

April 3, No. 14, pp. 605-652

66 *Promotion of Growth of Plants by Radium *Emanations.* (Wachstumsforderung durch Radiumemanation.) W. Falta and G. Schwarz.
67 *Influence of Radium *Emanations on Gaseous* Metabolism and Circulation of the Blood. (Einfluss der Radiumemanation des Menschen.) auf den Gaswechsel und die Blutzirkulation A. Loewy and J. Plesch:
68 Connection Between the Kidneys, *the Suprarenals* and High Blood-Pressure in Human Pathology. (Hypertonische Diathese und nephrogene Hypertonie.) *E. Frank.*
69 Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. (Zum Wert der *Röntgenstrahlen für die* Diagnose der Lungentuberkulose.) M. Levy-Dorn.
70 Cause and Significance of Scapular *Sounds.* (Scapularkrachen.) R. Habermann.
71 Cysts in the Tarsal Scaphoid. (Knochencyste im Os naviculare.) G. A. Wollenberg.
72 Legislation on Injurious Dyes. *(Zur Revision des Reichsgesetzes betreffend die gesundheitsschädlichen Farben.)* T. Weyl.
73 *Quantitative Determination of Uric Acid in Urine, *Blood and* Other Serous Fluids. (*Einfache und* schnelle Methode zur quantitativen Bestimmung von Harnsäure.) Aufrecht.

58. **Intermittent Limping and Spinal Symptoms After Poisoning with Male Fern.**—In the case reported by Magnus-Levy the patient, a man of 38, took 8 gm. of extract of male fern with 16 gm. of castor oil, the combination being a proprietary mixture (Tritol-Stark) to expel tapeworm, the man believing that he had this parasite and taking the medicine without consulting a physician. For several years he had had symptoms suggesting a slight tendency to intermittent limping, but not sufficient to impair his usefulness as a policeman. The trouble was most pronounced in the morning, after the night's rest, the same as in a case recently reported by H. Curschmann. The male fern caused vomiting, violent clonic and tonic cramps, irritation of the kidney and fever, but the eyes did not seem to be affected. The tendency to circulatory disturbances was seriously aggravated, the toes were congested, numb and with blue patches on the leg. The man had to stay in bed for six weeks with varying pains in the contracted leg, and he was left with serious paresis of the leg, the type suggesting poliomyelitic paralysis. Levy is inclined to explain the syndrome as the result of a direct toxic action of the drug on the already diseased artery wall, on the cells in the spinal cord, and also on the smooth musculature. The artery cramps seemed to affect predominantly the vasa vasorum of the already pathologic blood-vessels of the left leg and of the lowest segment of the spinal cord, where the toxic action of the drug was felt most powerfully and inflicted permanent injury. The patient improved under iodin and electricity so that after a four-weeks' course he could walk for ten or fifteen minutes without being obliged to stop and without fatigue. The skin is more of a normal tint and the pulse in the arteries of the foot is occasionally perceptible although weak. The effect of iodin is soon apparent in these cases, the parts showing the influence of better nourishment and function. The benefit from iodin in intermittent limping is accepted by Levy as sustaining its efficacy in general arteriosclerosis although ordinary arteriosclerosis is by no means necessarily the causal factor in intermittent claudication, and the latter may improve even without the use of iodin.

59. **Disease of Cardiovascular System.**—Honigmann states that more than 20 per cent. of the mortality after the age of 40 is due to cardiovascular disease, and that the proportion of persons with these disturbances is still higher among the well-to-do. The general practitioner should aim to make a correct prognosis rather than to seek for the exact anatomic basis. Even if the newer methods of estimating the functional capacity of the heart are able to do all that is claimed for them, yet it would be impossible, he says, to get the ordinary patient to submit to the full battery of these tests. And even if he would, the tests reveal only isolated phases of the cardiovascular functioning; even the determination of the blood-pressure is dependent on so many factors that it is impossible to interpret it always exactly, and the gross variations can be estimated with the finger as well as with the most complicated apparatus, unless a prolonged study of the pulse is made which is not practicable outside of institutions. In reviewing his twenty-five years' experience with patients with cardiovascular disturbances under observation for many years, Honigmann has been impressed with the comparative frequency of three types: fibrous degeneration of the heart muscle, angina pectoris and renal arteriosclerosis with heart trouble. The main feature of the first type, the chronic myocarditis, is the severity of the disturbances from lack of compensation while the prognosis is more favorable than in other forms of heart disease. These patients suffer from shortness of breath with physical or even mental effort; the pulse is irregular and it may remain so after compensation has been restored and the pulse is full and strong. The irregularity is the result of some fibrous patch in the heart and is a favorable sign in these conditions. The disturbances in these cases come on gradually, but the second type is distinguished by the sudden onset, and after subsidence of the attack of cardial asthma all returns apparently to normal. The more the dyspnea symptoms in this type predominate, the better the prognosis, while sensory disturbances, suggesting angina pectoris, render the prognosis graver. If the patient can spare himself in the intervals, this form of heart disease may permit long survival. In a case cited, eight years elapsed after the first attack before the patient succumbed, and the trouble had probably been developing long before that first attack of cardial asthma. It is typical of the disturbances in this group of cases that they do not follow the overexertion at once but come on several hours afterward. Signs of general arteriosclerosis are evident as a rule in these patients, but the heart is not dilated although symptoms during the attack may indicate that it is. Development of a Cheyne-Stokes type of breathing and psychic symptoms naturally render the prognosis graver. When the attacks commence in the form of angina pectoris, the heart is close to the limits of its functional capacity and in his experience such patients have survived only for six or nine months.

In the third type, the arteriosclerosis involves principally the kidneys although the kidney symptoms seem to be merely a by-phenomenon. The albuminuria and tube-casts in the urine vary from time to time and a careful watch should be kept over them and over the hypertrophy of the heart. When the left heart is hypertrophied and the disturbances are thus perfectly compensated, the prognosis is not bad. With slight changes in the mode of life such patients can continue at business even if annoyed by sensations of pulsation, especially before dropping to sleep, frequent fatigue and a peculiar oppression in the chest. The functional capacity of the heart must be estimated from the behavior of the pulse and other organs. Cheyne-Stokes breathing and the psychic behavior of the patient are instructive signs with cardiovascular disease, especially slight confusion on waking from sleep, carrying dream impressions into the waking state. Occasionally these patients forget names and words, they feel depressed and irritable without cause. Especially after the attacks a kind of confusion persists, although physically the patient feels comparatively well. He is liable to confuse places and imagine he is in some place where he used to live or is in some foreign land; and he confuses periods of time. These phenomena may last for a few days or only hours, but they have a bad prognostic significance; when they have subsided the patient is liable to brood over them and finally they become more constant. In time they may change to agitation and excitement, with distrust of the family and friends. In cases in which these psychic disturbances were observed, the patient never survived for longer than a year or year and a half in his experience. These symptoms were never encountered with the chronic myocarditis or coronary angina but they were frequent with general arteriosclerosis and most so with arteriosclerotic contracted kidney. They coincide with the increase in the insufficiency of the cardiovascular apparatus, and thus seem to form an integral part of the disturbance, and hence are important for the prognosis. Honigmann warns against premature and injudicious use of digitalis; bed rest alone will often answer the purpose. Morphin on the other hand is often indispensable. It is not wise, he thinks, to inform the patients that they are dangerously ill. So long as the state of compensation permits, the trouble should be painted for the patient in brighter colors than as the physician sees it. Particularly with cardiovascular disease should every effort be made to refrain from depressing the patient, who knows that something is wrong with his heart and that he must spare it extra exertion, but his business need not be interfered with; the danger lies in the hours outside of business, in sports, eating and drinking. In proscribing dangerous factors the physician must constantly weigh whether the good to be derived from his restrictions will counterbalance the depression caused by the loss of coffee, alcohol or exercise, etc. By permitting the minor pleasures of life it may be possible to secure more important changes in the entire mode of life.

60. **Functional Ileus in Infants.**—Blochmann reports three cases of suddenly developing occlusion of the bowel in young infants which he was able to remedy by introducing a rubber tube into the anus and pushing it up into the bowel for a little over 3 inches. This evidently opened a valve-like

contraction or fold in the bowel; flatus and stools came at once and the children were cured. One succumbed to the sepsis resulting from the long continued ileus before treatment was applied. The others recovered although one had recurrence of the trouble a few months later, conquered anew by the tube at the first sign of trouble. In all the children the abdomen was enormously distended which is never observed under other conditions in breast-fed infants with obstruction of the intestines even for so long as five days. This valve occlusion of the intestines may produce conditions similar to those in Hirschsprung's disease and may aggravate this disease if it be already present.

64. **Scarification in Place of Decapsulation of the Kidney.**—Zondek reports experimental research and clinical experience which show that decapsulation is liable to entail serious injury of the kidney while approximately the same results can be obtained by merely scarifying the capsule. The surgeon's task is extremely simple; the main point is to determine the indications for operating, and this general practitioners, clinicians and anatomists must study in concert. The scarification technic spares the larger vessels better than nephrotomy.

66 and 67. These and other communications on radium were summarized in the *Berlin Letter in* THE JOURNAL, *April 15*.

73. **Quantitative Test for Uric Acid.**—Aufrecht evaporates the urine, blood or other fluid; adds a saturated solution of ammonium chlorid, separates the ammonium urate by centrifuging and titrates with potassium permanganate. The technic is described in detail and stated to be simple and reliable. The findings were regularly the same as those with the Ludwig-Salkowski test applied to control specimens.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 20, XLI, No. 9, pp. 289-336

74 Serotherapy of Diphtheria. F. Krumbein and E. Tomarkin.

Deutsche medizinische Wochenschrift, Berlin

March 30, XXXVII, No. 13, pp. 577-624

75 *Serotherapy of Typhus. (Zweiter Bericht über die Behandlung des Typhus abdominalis mit Heilserum.) R. Kraus and R. v.Stenitzer.
76 Cause and Treatment of Hay-Fever. (*Ursache und spezifische Heilung des Heufiebers.*) W. P. Dunbar.
77 *Physiology* of Sympathetic Nervous System. (Allgemeine Bemerkungen zur Physiologie des vegetativen Nervensystems.) L. R. Müller.
78 Traumatic Circumscribed Hyperhidrosis. (Zur Kasuistik der zirkumskripten Hyperidrosis—mit Ageusie—auf traumatischer Basis—Läsion der Chorda tympani.) K. Halbey.
79 *Auscultation Findings in Intestinal Tract and Their Diagnostic Importance. G. Glücksmann.
80 Successful Decapsulation of the Kidney in Uremia from Acute Nephritis in Girl of 6. (Nierenaushülsung bei Urämie.) *T. Gumbel.*
81 *Eye Disturbances After Salvarsan. (Augenerkrankungen nach Salvarsanbehandlung.) H. Davids.
82 Suggestions for Improved Treatment of Neuropathic and Psychopathic Individuals. H. Oppenheim.

75. **Serotherapy of Typhoid.**—Kraus and Stenitzer review the experiences with typhoid antiendotoxin in three epidemics; nearly a hundred patients were given subcutaneous or intravenous injections and when this was done early in the disease the beneficial action was unmistakable. The results confirm those reported in their previous communications on the subject and justify, they declare, further efforts in the line of serotherapy.

79. **Diagnostic Importance of Auscultation of Gastro-Intestinal Tract.**—Glücksmann comments on the neglect of this important aid for diagnosis of conditions in the gastro-intestinal tract, and describes his application of auscultation to determine conditions in regard to the motor functioning of the stomach. He does not attempt to distinguish the quantitative or qualitative features of the sounds, but merely the time of their *appearance and* their duration. He has devoted his attention mainly to auscultation of the pylorus, and has found that it is possible by this means to determine *when* and in what *manner* the stomach passes its contents along into the intestines, in short, to supervise its motor functioning. He applies the stethoscope to a *point three* fingerbreadths to the right of the umbilicus and three fingerbreadths above the plane of the latter. A long strip of paper is marked *off into* sixty numbered fields *and* at each sound that is heard the listener makes a mark on the square field corresponding to the minute as he notes it on the watch. The findings can be controlled by a rubber bulb which the patient holds in his hand that records simultaneously on a revolving drum the moment the sound is perceived. He has applied this method of examination to over a hundred persons, some healthy and others with various stomach symptoms. The stethoscope was thus applied for half an hour before breakfast. The patient then *took a test breakfast and after this* the stethoscope findings were recorded for an hour or an hour and a half. The room was kept a little warmer than usual and the findings were compared with those obtained by other methods of testing stomach functioning. Among a number of interesting facts learned by this method is that the digestive tract is never in absolute rest, the sound of fluid passing through the pylorus can be heard occasionally even with the fasting stomach, and this pyloric reflex occurred constantly at the moment when breakfast was brought into the room. The pyloric reflex occurred further much more frequently and was much more pronounced in case of disease of the small intestine. It was interesting to watch the behavior of milk; when the secretory function was at fault the milk was expelled like any other fluid from the stomach, but with normal acidity it coagulated into a solid body, as could be readily recognized by the auscultation findings; they thus revealed the existence of gastric achylia and permitted an estimation of the individual capacity for digesting milk. This may prove of great importance in pediatrics. The findings threw light also on the *action* and effects of various drugs, on the antagonism between certain drugs, morphin and belladona or drugs to correct acidity, stomach bitters, etc.

81. **Eye Disturbances After Salvarsan Treatment.**—Davids reports a case of bilateral iritis developing in previously sound *eyes two days after injection of salvarsan.* It accompanied a pronounced Herxheimer reaction, and he is convinced that all the eye affections observed after administration of salvarsan are true syphilitic phenomena, and that they might have been prevented by injecting larger doses of the salvarsan. In his case the iritis *promptly* subsided *without leaving a trace after* a second, intravenous injection of salvarsan. He reviews all the literature he can find on the subject of eye disturbances after administration of salvarsan, the data confirming, he states, the above explanation of the trouble.

Deutsche Zeitschrift für Chirurgie, Leipsic

March, CIX, Nos. 1-2, pp. 1-204

83 Behavior of Ureters with Genital Prolapse. (Verhalten der Ureteren beim Genitalprolaps des Weibes.) W. Hirokawa.
84 *Prognosis of Dislocation of the Shoulder and Elbow. (Prognose der *Luxatio humeri und Luxatio antibrachii posterior.*) H. Schmidt.
85 *Local Anesthesia* for Appendicectomy. (Anwendung der Lokalanästhesie bei Eingriffer [illegible] Bemerkungen zur Erklärung [illegible] F. Hesse.
86 *Resection of Gasserian Ganglion for Trigeminal Neuralgia. *(Beitrag zur operativen Behandlung der Trigeminusneuralgie nach Krause.)* E. Bircher.
87 *Peroral Intubation for Operations on Nose, Mouth and Throat. W. Kölle.
88 Dislocation of the Radius with Pathologic Cubitus Valgus. B. Baisch.
89 *Acute Osteomyelitis of the Spine. (Akute Wirbelsäulenosteomyelitis.) W. Gundermann.
90 *Incarcerated Gangrenous Hernia. (Erfahrungen bei der operativen Behandlung des abgeklemmten brandigen Darmes.) K. Berkofsky.
91 *Cysts in Common Bile Duct. (Zur Kenntnis der *Choledochuscysten.*) H. Schloessmann.
92 Separation of Epiphysis and Fracture of Neck of *Femur* in the Young. (Ueber Epiphysenlösung am Schenkelhalse und echte Schenkelhalsfrakturen *im jugendlichen* Alter.) Stephan.
93 *Fracture of Jaw. (Neue Methode zur Behandlung der Unterkieferbrüche.) B. Cuffaro.
94 Incarceration of Ovary or Tube in Hernia in *Infants.* (Brucheinklemmung von Adnexen im Säuglingsalter.) O. Langemak.
95 Tumor of the Nipple. (Primäre Geschwulstbildung der *Brustwarze.*) O. Creite.

84. **Prognosis of Dislocation of Shoulder or Elbow.**—Schmidt states that the outcome was *good* in 81.5 per *cent.* of his cases of dislocation of the shoulder and was satisfactory in 69 per cent. of the cases of dislocation of the elbow, but only twenty-seven of his total material of *ninety-two* cases of dislocation of the shoulder could be traced to date, and only twenty of the forty-six cases of dislocation of the elbow. These results are much more favorable than those reported by

other German surgeons, and Schmidt ascribes the better functional outcome to the lack of orthopedic treatment after reduction. The arm is merely held in a loose sling passing around neck and wrist, and nothing more than light stroking massage is applied and this only enough to promote the circulation and hasten the absorption of the extravasated blood. The Roentgen-ray findings in the twenty cases of backward dislocation of the elbow are reproduced. The findings seem to demonstrate that the manipulations necessary to reduce the dislocation are responsible for the local ossification which interferes with normal functioning in so many of these cases. This explanation applies in particular to one of his cases in which complete ankylosis developed. The vigorous attempts to reduce the dislocation had not been successful and had evidently injured the joint so that there was a large patch of ossification in the bend of the elbow.

86. **Gasserectomy.**—Bircher states that only twelve operations for intracranial removal of the Gasserian ganglion have been done in Switzerland and he adds three more to the list. The first two patients were women 76 and 30 years old, and both were cured at once of the trigeminal neuralgia and unilateral vasomotor symptoms. The operations were done according to Krause's technic. Seven peripheral operations had been done on the first patient in the course of fourteen years with transient benefit each time after resection of a stretch of the nerve. In the younger patient all three branches of the trigeminal nerve were affected, and the symptoms indicated an intracranial trouble, so no time was wasted on peripheral operations. The assumption of an intracranial site for the trouble was sustained by the edema of the lid and the congestion in the right side of the face and right arm and exophthalmos—all of which disappeared after the gasserectomy. In both cases the external carotid artery was ligated as a preliminary measure. The younger patient for two weeks after the operation showed symptoms of mild psychic disturbance which then subsided; it is possible that the injury from the retractor holding back the brain tissue may have been responsible for this. In a third case there was so much bleeding that the operation proved exceedingly difficult. The patient was a man about 70 with pronounced arteriosclerosis which had altered the vessels so that they did not behave normally and death followed in a few hours from internal cerebral hemorrhage. Gasserectomy is evidently too long and serious an operation to be attempted with existing arteriosclerosis, especially of the vessels of the neck and head; it increases the bleeding and renders the brain more sensitive to the pressure of the retractor while it enhances the danger of apoplexy. Nearly all the fatalities on record were in patients with arteriosclerosis.

87. **Kuhn's Peroral Intubation.**—Kölle gives an illustrated description of Kuhn's flexible tube and the method of its application to aid in operations on nose, mouth and larynx, with detailed reports of three cleft-palate operations, and four of tumors in all of which the peroral intubation rendered valuable service.

89. **Acute Osteomyelitis of the Spine.**—Gundermann reports a case of this affection, the only one on record, he says, terminating in recovery. His patient was a previously healthy man of 28, and the spinal affection followed a carbuncle on the back of the neck. He was traveling at the time, and the frequent change in physicians and a complicating pleural empyema aided in retarding differentiation of the true trouble. It is the fifth case on record with complicating pleural empyema. The osteomyelitis involved the seventh dorsal vertebra, with posterior mediastinitis and irruption into the left pleura and secondary, non-suppurative involvement of the right pleura, with final irruption into a bronchus. After resection of ribs and part of the left transverse process of the seventh dorsal vertebra and evacuation of the spinal process, with removal of sequesters, and measures to control the kyphosis, the patient finally recovered. He coughed up small sequesters of bone from time to time, but by the end of eighteen months after his primary carbuncle he was in permanently good health. Staphylococci could be cultivated in pure cultures from the pleural and spinal lesions. This case and others in the literature emphasize the importance of prompt and energetic measures on suspicion of vertebral osteomyelitis. As soon as the most dangerous stage is past, steps should be taken to prevent development of kyphosis, keeping the patient in bed at first and having him wear a supporting corset when allowed to get up, which should be done very cautiously. Complete restitution is the rule. In the case reported the patient was able to resume his active duties as a cavalry officer.

90. **Incarcerated Gangrenous Hernia.**—Berkofsky analyzes sixty-one cases of gangrenous hernia and twenty of gangrene of the intestines from other cause. The mortality was 32.6 per cent. in the cases of hernia with primary resection of the bowel and 62.5 per cent. in the others. Sixteen interesting cases are reported in detail, including one with volvulus of the sigmoid flexure recurring within three years, and another with volvulus of the small intestine recurring so that the bowel twice had to be resected. When the large intestine was involved in the gangrenous process, the outcome was nearly always unfavorable, whether the bowel had been resected or not. But with gangrene of the small intestine, primary resection cured the patients.

91. **Cyst in Common Bile Duct.**—Schloessman adds another to the fifteen cases of this affection on record; in all the true cause of the trouble was not recognized during life, and the treatment instituted was directly contrary to the correct indications. His patient was a girl of 7. The symptoms in this and the other cases were merely intermittent jaundice, possibly continuing for years, a tumor in the right upper abdomen of varying size and consistency, and colic-like or continuous abdominal pains, generally proportional to the varying jaundice and tumor. The ages ranged from 4 to 24 in the cases on record, and only two of the patients were males. Exploratory puncture of the cyst in his case permitted the escape of contents into the peritoneum, with consequent fatal peritonitis. As the cyst contents were sterile, the peritonitis did not develop at once, even although the operation was not attempted until thirty hours after the cyst had been punctured. Only one case of recovery is known; the patients are usually not seen until the condition is precarious from the long cholemia, and then more precious time is wasted in trying to differentiate the trouble, so that when an operation is attempted the patients are too debilitated to recover. It is not enough to evacuate the cyst, he declares; arrangement must be made for ample communication between the bile duct and the duodenum.

93. **Treatment of Fractured Lower Jaw.**—Cuffaro fitted a strong plate over the lower teeth which held them firmly in place and immobilized the two halves of the jaw. A groove was cut out of the top of the plate, permitting the lower teeth to be used in chewing, which aided functional restitution. The results were good, with the minimum discomfort for the patient.

Medizinische Klinik, Berlin

April 2, VII, No. 14, pp. 520-558

96 The Wassermann Reaction. (Die Wassermannsche Probe.) C. Fraenkel.
97 *Clinical Manifestations of Vital Reactions. (Allergie, Anaphylaxie, Immunität.) J. Bauer.
98 *Th[illegible] Steam Jet. (Bedeutung des [illegible]
99 *Di[illegible] by Fluorescein Taken Inter- [illegible] Augen durch innerlichen Gebrauch von Uranin.) O. Fehr.
100 Prevention and Treatment of Flat-Foot and Deformities of the Toes. G. Müller.
101 Technic, Anatomy and Indications for Suprasymphyseal Delivery According to Frank. K. Hartmann.
102 The Blood in Typhoid. (Zur Hämatologie des Typhus abdominalis.) H. Rotky.

97. **Vital Reactions to Infections.**—Bauer discusses the various clinical manifestations of the vital reactions to infections, the so-called allergy which is evidenced in the form of immunity or anaphylaxis. The phenomena of the vital reactions are generally acute primary pictures of pathologic conditions. The changes in organs are generally the consequences of these original vital reactions. It is the task of the future, he says, to reveal the connection between them.

98. **Importance of the Steam-Jet Treatment.**—Brieger is in charge of the hydrotherapeutic institute of the university of Berlin, and he declares that the steam jet is not accorded the

importance in therapeutics which it deserves. He shows the fundamental physiologic difference between the action of dry and moist heat; dry heat has only a superficial action, as it is a poor conductor. Moist heat, on the contrary, is an unexcelled conductor and rapidly penetrates through the organs of the body. The steam jet possesses this property in the highest degree, inducing a hyperemia which may last for more than twenty-four hours. The best method of its application is the jet of steam under high pressure, which procedure he applies to a third of his patients. In sciatica he has the steam jet played on the painful points of the sciatic nerve and its main branches for ten or fifteen minutes. A combination of the steam jet with massage and passive movements is especially effectual. The steam jet softens the tissues, improving conditions for massage; dry heat leaves the tissues so dry that massage afterward is liable to be painful. The best results have been obtained with joint affections of rheumatic, gouty and gonorrheal origin, particularly when *only one joint* was affected. Excellent results have also been obtained with elbow and hip-joint disease. In one case rapid benefit was obtained by this means in a severe rheumatic affection of the jaws which had immobilized them.

99. **Differential Stain for Inflammation of the Iris and Ciliary Body.**—Fehr has confirmed in fourteen cases Hamburger's statement in regard to the remarkable way in which a stain, fluorescein, given by the mouth in a dose of 5 gm. for adults, was followed by green discoloration of the inflamed region in the eye in case of keratitis, iritis or uveitis. There is no discoloration in the sound eye or with other ocular affections, such as conjunctivitis and glaucoma. The discoloration is probably due to the increased permeability of the vessel walls.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

March, XXXIII, No. 3, pp. 265-412

103 *Tuberculosis and Pregnancy. (Gynäkologische Tagesfragen.) F. Schauta.
104 Bactericidal Properties of Vaginal Secretion and Urine During Pregnancy. (Bakterizide Eigenschaften des Vaginalsekretes und des Urines Schwangerer.) B. Zöppritz.
105 Auto-Infection or Ectogenous Infection? C. Koch.
106 Scopolamin-Morphin Anesthesia in Obstetrics and Surgery. (Der Dämmerschlaf oder die Skopolaminmorphin-Mischnarkose in ihrer Anwendung bei Entbindungen und Operationen.) B. Bosse.
107 *Allowing Patients to Get Up Early. (Frühaufstehen der Wöchnerinnen.) H. Pruska.
108 Ovarian Cause of Uterine Hemorrhage. (Die ovarielle Ursache uteriner Blutungen.) O. Pankow.

103. **Tuberculosis and Pregnancy.**—Schauta thinks that it is impossible to estimate beforehand whether the tuberculosis is going to flare up under the influence of the pregnancy or not, as this is liable even in the mildest cases. The records show aggravation in 75 per cent. and a fatal outcome in 50 per cent. of all cases. Even sanatorium treatment is generally unable to ward off or modify the aggravation of the disease. Allowing the pregnancy to progress to its latter half and then interrupting it, is particularly disastrous for the mother, but might be indicated in exceptional cases to obtain a living child, the mother being beyond hope. The logical conclusion from the evidence presented is, he thinks, that early abortion should be the routine procedure when a woman with certain tuberculosis of the lungs or larynx becomes pregnant. He prefers vaginal Cesarean section rather than the use of tents, which is more than liable to be followed by an ascending catarrhal affection of the tubes with suppuration. The anterior colpohysterotomy avoids this, and he supplements it by ligating the tubes, without pulling down the uterus, merely seizing the round ligament close to the uterus and ligating the tube twice, then drawing the round ligament up and suturing it over the uterine stump. It is unnecessary to bury the other stump. This technic is simple and permits restitution of the permeability of the tube if the tuberculous process should heal and the woman longs for a child. The resected tube or the ovary might possibly be implanted in the uterus wall. The other technics that have been suggested for temporary or permanent sterilization require laparotomy.

107. **Allowing Parturients to Get Up on the Fourth Day.**—Pruska concludes from the experiences at the third obstetric clinic at Prague that the morbidity of the lying-in period is materially reduced when the patients are allowed to leave the bed by the fourth day after delivery; the involution of the uterus proceeds fully as well, retroflexion is much less rarely observed, and the general health is materially influenced, he thinks, for the better. Only those are allowed to get up so early who have not required suturing, who feel well and whose pulse and temperature have been persistently normal. He compares a group of 1,000 patients allowed to get up on the fourth day with an equal number who were not allowed up till the ninth day but who might have got up on the fourth day according to the present rule. In the first group only 5.8 per cent. developed fever after the fourth day while it was observed in 10.5 per cent. of the second group.

Münchener medizinische Wochenschrift

March 28, LVIII, No. 13, pp. 665-720

109 Experimental Syphilis. (Sekundäre Syphilide, primäres Hornhautssyphilom.) E. Hoffmann.
110 Anaphylaxis and Lymph Formation. M. Calvary.
111 Serodiagnosis of Trichinosis. H. Strobel.
112 *The Tryptophan Test for Gastric Cancer. (Zur Frage der Verwertbarkeit der Glyzyl-Tryptophanprobe für die Diagnose des Magenkarzinoms.) O. Neubauer and H. Fischer.
113 *Return Cases of Diphtheria. Sörensen.
114 Simultaneous Scarlet Fever and Typhoid. Meissner.
115 Lipogenous Diabetes. E. H. Kisch.
116 Cause of Incarceration with Pregnant Retroflexed Uterus. H. Cramer.
117 Experiences with Salvarsan. H. Isaac.
118 Behavior of Heart with Congenital Funnel Breast. (Verhalten des Herzens bei kongenitaler Trichterbrust.) F. M. Groedel.
119 Antithyroidin Treatment of Thyroid Hyperfunctioning. (Thyreotoxische Erscheinungen und ihre Behandlung mit Antithyroidin.) E. Laser.
120 Obstetrics in Munich a Century Ago. (Münchener Geburtshilfe vor hundert Jahren.) O. Mittelacher.

112. **Glycyl-Tryptophan Test for Gastric Cancer.**—Neubauer and Fischer report the experiences of others with their new test which have confirmed their previous announcements that the gastric juice in normal conditions does not contain the enzyme which splits glycyl-tryptophan. The findings were positive in 84 per cent. of twenty-six cases with certain cancer, in 75 per cent. of twelve cases with clinically certain cancer, in 23 per cent. of twenty-six cases of cancer suspects and only in 12 per cent. of forty-two patients with nonmalignant stomach trouble. These figures do not include those of Weinstein as he used a slightly different technic [described with the findings in thirty-nine cases and negative findings in twenty-four other patients free from gastric cancer, in The Journal, Sept. 24, 1910, page 1085]. Neubauer and Fischer remark that absolute specificity cannot be expected in a chemical reaction like this. The data they present are compiled in this way to show the value of the test in the most objective manner.

113. **Return Cases of Diphtheria.**—Sörensen states that there were eighty-two return cases in connection with the 7,037 diphtheria cases at the Copenhagen hospital between 1889 and 1901. In only eight of the patients occasioning the return cases could diphtheria bacilli be found in the throat when they were discharged. The interval was from two to thirty-three days, the majority of cases occurring from four to twelve days *after the first patient* had returned home.

Virchows Archiv, Berlin

March, CCIII, No. 3, pp. 321-480

121 The [illegible] in Tetany and Other Diseases. W. [illegible] in No. 2.
122 Gly[illegible] M. Ramberg.
123 Heart with Double Left Auricle in Girl of 11. (Herz mit linkem Doppelvorhof.) N. William and A. Abrikossoff.
124 Aneurysm of Left Ventricle. (Aneurysma des linken Herzventrikels mit abnormer Abgangsstelle der linken Koronararterie von der Pulmonalis bei einem fünfmonatlichen Kinde.) A. Abrikossoff.
125 Metaplasia of Epithelium. R. Kawamura.
126 The First Changes with Tuberculous Process in Kidneys of Cattle. (Die ersten Veränderungen der Nierentuberkulose bei den Schlacht-Rindern.) E. Moser.
127 Fat Content of Tuberculous Foci. E. Joest.
128 Traumatic Kidney Tumor. (Fall von traumatisch bedingtem Nierentumor, mit Bemerkungen zur Pathologie des "infiltrierenden Nierenkrebses.") R. Beneke and K. Namba.
129 Arteriosclerosis in Animals. (Ueber Arteriosklerose bei Tieren und ihr Verhältnis zur menschlichen Arteriosklerose.) C. Otto.

Wiener klinische Wochenschrift, Vienna

March 30, XXIV, No. 13, pp. 453-478

130 *Pathogenesis and Prophylaxis of the Plague. H. Albrecht.
131 *Decapsulation of Kidneys in Eclampsia. (Nierendekapsulation bei Eklampsie.) R. Franz.

132 *A Sulphur Reaction in the Urine with Cancer. (Eine Schwefelreaktion im Harne Krebskranker.) H. Salomon and P. Saxl.
133 Physiology of the Human Stomach. (Physiologie des Magens beim Menschen.) C. Mantelli.
134 Atoxyl Does Not Seem to Influence Production of Antibodies. (Beeinflusst Atoxyl die Bildung der Antikörper?) So.
135 Preventive Salvarsan Treatment of Syphilis. R. Knaur.
136 Temporary Sterilization of Women. K. Bucura.
137 The Question of Syphilis of the Auditory Nerve and Labyrinth. (Zur Frage der luetischen Erkrankungen des Labyrinthes und der Hörnerven.) G. Alexander.

130. **The Plague.**—Albrecht was a member of the Austrian committee sent to Bombay in 1897 to study the plague. Its four members, he says, were the first to insist that rats have something to do with the plague, and they proved it by discovering the bacilli in the carcasses of rats found dead in the streets. As early as 1895 plague was known to be endemic among the marmots of northwestern Asia, and he thinks that these animals may be the perennial source of the plague. When plague first appeared in India, the pneumonic form was most prevalent but gradually the bubonic type supplanted it, and he thinks that this same experience may be repeated in China and Manchuria. With a little care, prophylaxis of the bubonic type is effectual, as he learned by his personal experience at Bombay. An encouraging feature with plague is that it spreads very slowly at first, so that there is time to stamp out imported cases before an epidemic develops. But once obtaining a foothold in a place, it seems to be almost ubiquitous, like a genius epidemicus, at least in the slums.

131. **Decapsulation of the Kidneys in Eclampsia.**—From the successful case reported and other experiences, Franz concludes that decapsulation of the kidneys may prove of great value but that there is no sense in applying this measure until after delivery. The latter alone may afford the desired relief, but if the oliguria or anuria persist or the albuminuria increases and the convulsions or coma persist, then decapsulation may prove the only life-saving measure. It was done on both kidneys in the case reported, about seven hours after delivery; the patient, a primipara of 24, was in collapse with cyanosis, tracheal râles, small pulse of 140, blood-pressure 70. The convulsions had kept up after delivery; eleven preceded and four followed the decapsulation but improvement was soon marked and progressive.

132. **Sulphur Reaction in Urine with Cancer.**—Further experience has confirmed the previous announcement of Salomon and Saxl of the presence of polypeptids, of oxyproteic acid in particular, in the urine with cancer. They have now a record of over 500 urines which have been examined for their oxyproteic-acid content. In 70 per cent. of the cancer cases the findings were constantly positive while they were positive only in a very few other cases, and those mostly very serious conditions. The reaction, however, was obtained in pregnant women the same as in cancer. Even with early small cancers the reaction proved positive in many cases. The disappearance of the reaction after the cancer has been removed testifies to its connection with the malignant disease, but it seems to be independent of the cachexia and of the size and location of the tumor. The reaction is obtained by oxidizing out the neutral sulphur element of the oxyproteic acid in the urine. This is done with hydrogen dioxid, as they describe in detail, a distinct precipitate being thrown down in the urine from cancer patients while there is scarcely a trace of precipitation in other urine.

Zeitschrift für klinische Medizin, Berlin

LXXII, Nos. 3-4, pp. 189-376

138 Relations Between the Circulation in the Kidneys and the Arterial Blood-Pressure. (Beziehungen des Nierenkreislaufs zum arteriellen Blutdruck.) H. Senator.
139 *Causes of Hypertrophy of the Heart in Kidney Disease. (Ursachen der Herzhypertrophie bei Nierenkrankheiten.) H. Senator.
140 *Acute Encephalitis and Cerebral Thrombosis. S. Laache.
141 M[illegible] of P[illegible] Energy. (Zur Kritik der Sphygmobol-[illegible] H. S[illegible].
142 Action of Saponin on Blood-Producing Organs. (Experimentelle Untersuchungen über die Einwirkung des Saponins auf die hämatopoetischen Organe.) S. Isaac and K. Möckel.
143 Digestion and Absorption of Raw Starch. [illegible] Resorption roher Stärke verschieden[illegible] maler und krankhaft veränderter [illegible] Darmkanals.) L. Fofanow.
144 Manchurian Typhus: Clinical Picture and Its Bacillus. S. S. Botkin and S. S. Simnitzki
145 *Syphilis of the Aorta. H. Grau.
146 Influence of Respiration on Size and Position of Heart. (Röntgenkinematographische Studien über den Einfluss der normalen Respiration auf Herzgrösse und Herzlage.) F. M. Groedel.
147 Accelerated Respiration from Lack of Oxygen. (Ueber die Sauerstoffmangelpolypnoe und deren Bedeutung für den Organismus.) C. Sonne.
148 *Uremia. F. Obermayer and H. Popper.
149 Atony of the Esophagus. G. Holzknecht and D. Olbert.

139. **Causes of Hypertrophy of the Heart with Kidney Disease.**—Senator shows the fallacies in the various theories which ascribe the hypertrophy of the heart to mechanical, hydrostatic factors. Even injection of fluid paraffin into the renal artery, inducing embolism in the finest vessels in the kidney, is unable to produce conditions sustaining the assumption of physical factors. On the other hand, there is considerable evidence to prove that it is lack of the blood-pressure-raising substance, constantly present in sound kidneys, which is responsible for the hypertrophy of the heart with kidney disease. Either other organs work vicariously and to excess to supply this lacking physiologic substance, or some inhibiting action from some other direction is lacking. In studying the subject, a number of other organs should be taken into consideration, besides the suprarenals: this, he says, opens a broad field for research.

140. **Encephalitis and Cerebral Thrombosis.**—Laache reports a case of recurring encephalitis; the first attack ten years before had subsided under treatment but the second proved fatal at the age of 34. Except for an acute articular rheumatism in childhood the patient had been healthy. The symptoms in both attacks were intense headache, right facial paralysis and hemiplegia, with aphasia. Necropsy disclosed merely a pinkish discoloration of the white matter of the left brain, corpus callosum and cerebellum, with two foci of softening but no traces of a scar or cyst, and the vessels were comparatively intact. In another case, an acute hemorrhagic encephalitis was accompanied by secondary thrombosis of the cerebral veins. The patient was a young and previously healthy housemaid who had complained at times of severe headache during the last five or six weeks but there had been no appreciable fever. Then the headache became more severe and the girl died in five days, after three days of stupor. In a third case extensive cerebral thrombosis developed in a woman of 47, secondary to chronic renal tuberculosis and soon proved fatal. In a fourth case, an acute and intensive hemorrhagic encephalitis developed in a man of 36 with a history of epilepsy and chronic nephritis and positive Wassermann reaction. Whether syphilis or the kidney disease or both were responsible for the epilepsy and encephalitis is an open question. Eichhorst gives syphilis the first place among the infectious diseases which may entail epilepsy, but Strümpell denies that it has any connection with genuine epilepsy.

145. **Syphilis of the Aorta.**—Grau reviews twenty-three cases of disease of the aorta with a history of syphilis, three of mixed etiology and sixteen free from syphilis—his total material of aortic affections in the last two years. The latter group includes nine patients with a history of articular rheumatism. In the twenty-three syphilitic cases, there had been an interval of from six, fifteen, twenty-five and twenty-nine to forty-one years since the infection. The subjective symptoms were remarkably late in developing in the syphilitic cases while in the non-syphilitic they had been attracting attention for years. The syphilitic aortic lesions may exist unsuspected for years, without causing subjective symptoms. When these do appear, the condition is then so far advanced that breakdown of compensation follows soon after. There is less enlargement of the ventricle and less disturbances in the peripheral vessels with syphilitic disease of the aorta than with the non-syphilitic. The Wassermann reaction was positive in twenty-one of the syphilitic cases of aortic disease, but he found it negative in three certain cases. The prognosis is generally very unfavorable with syphilis of the aorta when failing compensation is observed. In three of the syphilitic cases melancholia and hypochondria were noticeable, and in another there was an actual psychosis with confusional anxiety and hallucinatory ideas; this type is apparently characteristic of the disturbances in the circulation in the brain resulting from the aortic lesions

148. **Uremia.**—The research reported confirms the importance of the presence of indican in the blood-serum as a sign of kidney disease in the stage of uremia. Recent literature on the subject is reviewed and the results of extensive clinical experience are tabulated. All the evidence shows the absence of indicanemia in health and outside of kidney disease, and its constant presence with advanced nephritis and retention of certain elements of the urine.

Zentralblatt für Chirurgie, Leipsic

April 1, XXXVIII, No. 13, pp. 457-488

150 *Suction Treatment of Infectious or Suspicious Wounds by Sterile Sand Baths. (Die Saugbehandlung infizierter und infektionsverdächtiger Wunden im sterilen Sandbade.) A. Thies.
151 Drainage of the Peritoneum. H. Iselin.
152 *Spiral Incision in Treatment of Varices and Leg Ulcers. E. Bircher.

150. **Suction Hyperemia in Sand Bath.**—Thies boils the sand in a 1 per. cent. soda solution for half an hour in linen bags holding 3 or 4 quarts. The bags are then hung up for a few hours to dry. The sand is then poured on a large pan with removable end-walls. The sand is rendered alkaline by the soda solution and the infected or suspicious lesion, on the arm for instance, is placed in the pan and the sand heaped over it. The capillary attraction of the sand keeps the wound dry, the suction being the greater the finer the grain of the sand. With a spoon the patient keeps putting fresh sand over the lesion. Thies applies these sand baths twelve or fourteen hours a day or longer unless the suction is so great that it cannot be tolerated so long. Burns, leg ulcers, phlegmons and all large open surfaces with inflammatory infiltration, putrid sores and gangrene are particularly adapted for this treatment which is also effectual in treatment of transplanted flaps, first covering the flaps with a piece of chiffon glued to the sound tissues around the flaps. The capillary attraction of the sand is shown by connecting an alcohol manometer with a Berkefeld filter full of water, and standing in a dish of fine sand; the water is drawn through the filter by the sand, leaving a negative pressure in the filter and rapidly sending up the manometer index.

152. **Treatment of Leg Ulcer.**—Bircher has obtained excellent results with the spiral incision running around the leg from ankle to far up on the thigh, according to the technic advocated by Rindflesch. He has applied it in eight cases. The large veins are divided at so many points that the tendency to varices is permanently cured.

Zentralblatt für Gynäkologie, Leipsic

April 1, XXXV, No. 13, pp. 505-536

153 Treatment of Umbilical Cord According to Ahlfeld. O. Wolde.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 19, XXXII, No. 34, pp. 355-370

154 Research on Fasting Animals After Nephrectomy. (Ulteriori osservazioni sul digiuno dopo la nefrectomia unilaterale.) A. Malesani.

March 26, No. 37, pp. 387-402

155 The Poliomyelitic Syndrome in Infectious Diseases of the Nervous System. H. Claude and L. Valensi.
156 *Local Applications of Iodin in Erysipelas. M. Ferrari.

156. **Local Application of Iodin in Treatment of Erysipelas.**—Ferrari reviews the history of iodin treatment of erysipelas and reports forty cases in which he has applied it with excellent results. It is important to paint the sound zone around first; then, with a fresh wad he paints the erysipelas patch and covers it with cotton to prevent the patient touching the region and spreading the contagion. He has found it best to apply the iodin lightly five or six times a day, thus preventing the tanning which is liable to occur when the skin is swabbed too copiously with the tincture. He prefers a 10 or 12 per cent. strength and warns that the tincture must be made comparatively fresh, and reiterates that it must be applied from the periphery of the lesion working toward the center instead of from the center outward, which is liable to spread the infection.

Policlinico, Rome

March 19, XVIII, No. 12, pp. 357-388

157 Incomplete Forms of Exophthalmic Goiter. (Le forme fruste del Morbo di Basedow.) P. Alessandrini.
158 *Treatment of Tetanus by Subcutaneous Injection of Phenol. G. Finzi and others.

March, Medical Section No. 3, pp. 97-144

159 Cobra Venom Hemolysis in Diagnosis. P. Alessandrini.
160 Activation of Cobra Venom by Tuberculous Serum and Its Diagnostic Importance. T. Pontano.
161 Pathologic Anatomy of Malta Fever. A. Tomaselli.
162 Severe Jaundice with Paratyphoid Infection. (Ittero grave con reperto del bacterium paratyphi *B* nel sangue e nella milza.) G. Antonelli.

March, Surgical Section No. 3, pp. 97-144

163 Effect on the Blood of Intravenous Injection of a Saturated Solution of Chloroform. (Effetti della cloroflebonarcosi sul sangue.) F. Gangitano.
164 Fracture of Costal Cartilages. V. Barnabo.
165 Etiology of Neoplasms. (Sui recenti contributi alla dottrina dei neoplasmi.) G. Fichera.

158. **Subcutaneous Injection of Phenol in Treatment of Tetanus and Sciatica.**—A number of reports by various writers are here collected, all showing the great benefit from the Baccelli technic in treatment of tetanus and sciatica to supplement local measures. About twenty-five case histories are reported with five of sciatica; the results were favorable in every case.

Riforma Medica, Naples

March 27, XXVII, No. 13, pp. 337-364

166 *Inflammatory Tumors from Migrating Foreign Bodies. (Tumori infiammatori da corpi estranei migrati.) I. Tansini.
167 Reactions in the Urine in Infectious Diseases. (La reazione di Volovskye; la reazione di Butenko.) L. Ferrannini.

166. **Inflammatory Tumors from Migrating Foreign Bodies.** Tansini found a fish-bone in a tumor in the abdominal wall below the navel; the tumor was excised on the presumptive diagnosis of a fibrosarcoma or neoplasm of embryonal origin. In a second case the tumor was in the submaxillary region, was indolent and growing harder, and was about the size of a hen's egg. It proved to be an inflammatory reaction to the presence of a scrap of a grain of wheat in the salivary gland. No giant cells were found in the inflammatory tumor in either case.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A Text-Book of Medical Diagnosis. By James M. Anders, M.D., Ph.D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, and L. Napoleon Boston, A.M., M.D., Adjunct Professor of Medicine, Medico-Chirurgical College. Cloth. Price, $6 net. Pp. 1195, with 443 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The Care of the Baby. A Manual for Mothers and Nurses. Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Fifth Edition. Cloth. Price, $1.50 net. Pp. 455, with 99 illustrations. Philadelphia: W. B. Saunders Co., 1911.

Hospital Management. A Handbook for Hospital Trustees, Superintendents, *Training-School Principals*, Physicians, and All Who Are Actively Engaged in Promoting Hospital Work. Edited by *Charlotte A. Aikens*, Author of "Hospital Training-School Methods and the Head Nurse." Cloth. Price, $3 net. Pp. 488, with 154 illustrations. *Philadelphia*: W. B. Saunders Co., 1911.

Unsoundness of Mind. By T. S. Clouston, M.D., LL.D., F.R.S.E., *Formerly Lecturer on Mental Diseases in the* University of Edinburgh. Cloth. Price, $2.50 net. Pp. 360, with 14 illustrations. New York: E. P. Dutton & Co., 1911.

Studies in Cardiac Pathology. By George W. Norris, A.B., M.D., Associate in Medicine at the University of Pennsylvania. Cloth. Price, $5 net. Pp. 233, with 85 illustrations. Philadelphia: W. B. Saunders, 1911.

The Prevention of Malaria. By Ronald Ross, D.P.H., F.R.C.S., D.Sc., Nobel Laureate. With Contributions by Various Men. *Cloth.* Price, $5 net. Pp. 669, with illustrations. New York: E. P. Dutton & Co., 1910.

The Sources and Modes of Infection. By Charles V. Chapin, M.D., Sc.D., Superintendent of Health, Providence, R. I. *First* Edition. Cloth. Price, $3 net. New York: John Wiley & Sons, 1910.

Courtship Under Contract. The Science of Selection. A Tale of Woman's Emancipation. By James Henry Lovell Eager. Cloth. Price, $1.20 net. Pp. 440. New York: The Health-Culture Co., 1911.

Twenty-Ninth Annual *Report of the* State Hospital for the Insane at Warren, Pa. For the Year Ending Nov. 30, 1910. Cloth. Pp. 97. To the Board of Commissioners of Public Charities.

Sixth Annual Report, Including Medical Supplement, of the Provincial Sanatorium. A. F. Miller, M.D., Superintendent, Kentville, Nova Scotia. Paper. Pp. 15.

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THE RÔLE OF DREAMS IN ETIOLOGY *

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Interest in the subject of dreams has been especially stimulated since Freud enunciated his theory. As is well known, Freud claims to be able to unravel dreams by his so-called analytic method, and he further regards dreams as directly concerned in the production of various hysterical symptoms, phobias, obsessions and delusions. In his brochure "Ueber dem Traum," and in his book "Die Traumdeuting," he tells us that he reached new conclusions with regard to dreams when he applied to them the same method of psychologic research which he had previously applied to the solution of various morbid phenomena. It becomes necessary, therefore, in order that we may have clear conceptions, to briefly review the origin and nature of his method.

Psycho-analysis, as is well known, began with Breuer's case of hysteria. Breuer and Freud stated that they found that the individual symptoms of hysteria immediately and permanently disappeared whenever they were successful in fully arousing in the patient the memory of the event which was causal to the development of the symptoms, together with the accompanying emotion, if, added to this, the patient gave the fullest possible description of this event and gave verbal expression to the emotion. Originally this method presupposed that the patient was capable of being hypnotized and was based on the expansion of consciousness which was supposed to ensue under hypnosis. Subsequently formal hypnosis was dispensed with. Freud's endeavor was to set aside the patient's symptoms, and he attained this end in so far as he placed the patient back into the psychic state in which the symptoms first made their appearance. There appeared under these circumstances memories, thoughts and impulses which had long disappeared from his normal consciousness. When the patient communicated these, his "soul happenings," to his physician, and did so with intense emotional reaction, the symptom was conquered and its recurrence prevented. This result Breuer and Freud explained as follows: The symptom had existed as a substitute or in place of another past experience which had been suppressed (*verdrängt*), and the recollection of which had become subconscious—that is, it was a conversion of the original memory of an act and its associated emotion into a pathologic symptom or obsession. The therapeutic efficacy of their procedure Breuer and Freud explained as the catharsis of the repressed, "locked-up" emotion which had been attached to or associated with the suppressed psychic experience. Freud asserts that his method, or the "cathartic method" as it has also been termed, is, in contrast to all other methods of psychotherapy, characterized by the fact that its therapeutic efficacy is not due to suggestion, a statement which the facts attested by Freud himself lead us frankly to question. I need hardly detail the method which Freud employs. Briefly it is as follows: The patient lies on her back on a couch, while he himself sits on a chair back of her and out of her line of vision. He no longer requests the patient to close her eyes as he did in his earlier method and avoids every touch or procedure such as would be in keeping with hypnosis. Such a séance, he informs us, has the character of a conversation between two persons equally awake, one of whom, the patient, is spared every possible muscular effort and every diverting sensory impression such as might disturb her in her concentration on her internal psychic processes.

In order to take advantage of these involuntary ideas or conceptions of the patient, Freud requests the latter to allow herself to drift in her communication, just as one would drift in a conversation in which one passes in turn to the most varied subjects. He enjoins on the patient, before she enters into the detailed account of her history, to tell everything that comes into her head, whether she thinks it important or unimportant, whether it seems relevant or senseless. The patient is especially requested not to suppress any thought or idea because this idea happens to be shameful or painful.

It is with this procedure as applied to dreams that we are in this paper concerned. The essential facts of a dream having been noted in writing or in an oral statement, as the case may be, the individual is to communicate every idea without exception that occurs to her in connection with the dream. Ordinarily a person thinking about a dream will reject this or that idea suggested by the dream as unimportant and as having no connection with the dream. It is this judgment or critique, as Freud calls it, which under ordinary circumstances causes the patient to reject certain ideas from the communication; but if the patient can withhold all judgment or critique in regard to the ideas which present themselves in thinking over the substance of a dream, a psychic material is furnished which leads to the solution or unraveling of the dream. The essential facts of the dream, that is the dream as it is remembered, Freud calls "the manifest dream content"—(*den manifesten Trauminhalt*). The material derived from the dream, i. e., from the unrestrained association of ideas ensuing on a giving up of one's self to dwelling on the dream, Freud calls the "latent dream content." The psychic process by means of which the latent dream content is revealed, he calls the "dream work" or *Traumarbeit*. The opposite psychic process he calls the "analysis work" or *Analysenarbeit*.

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* Read before the Philadelphia Neurological Society, Feb. 24, 1911.

Further, Freud says that when one compares the number of ideas contained in a dream, as written down from memory, with the number of ideas to which the analysis leads, the dream work reveals that a very great condensation, or *Verdichtung,* as he calls it, has taken place in the dream. It is difficult to form an adequate idea of this condensation. It becomes more apparent the deeper the dream analysis penetrates. We do not find a single factor of the dream content from which threads of association do not lead into three or more different channels; there is no situation which is not pieced together out of three or four impressions and experiences; in other words, Freud evidently regards the dream content as a compound of a number of psychic elements. He compares it to the composite family photographs of Galton. The dream work brings the various apparently superimposed dream components to light. The common factors of the dream content become more prominent, while conflicting details disappear. This explains in part the varying prominence or peculiar indistinctness of so many elements. Where common factors or common elements between the dream thoughts are not present, the dream work endeavors to evolve such in order to make a common presentation of the dream possible. The simplest way to bring thoughts which have nothing in common nearer to each other, consists in the change of the verbal expression for one of them by means of which the other by a corresponding transformation may approach nearer. It is a process similar to that of making rhymes in which the similarity of sound supplies the common element.

Freud believes that through the process of condensation of the dream, we find an explanation of certain features of its content which are peculiar to it alone and are not found in conceptions formed in the waking state. These are the collective and mixed conceptions of persons and the strange mixed pictures, creations and animal compositions, comparable to those of oriental phantasy. In dream compositions they are formed with inexhaustible richness. Every element of the dream content is through the material of the dream thoughts, as Freud puts it, overdetermined, and traces its origin, not to a single element of a dream-thought, but to a whole series of such thoughts. The latter do not stand close to each other, but are of the most varied origins in the thought fabric. The dream element is, in the right sense, the representation in the dream content of all this disparate material.

The analysis reveals, however, another side of the relation between dream content and dream thoughts. Just as from every dream element connections lead to a number of dream thoughts, so, as a rule, a dream thought is represented by more than one dream element. The association paths converge not simply from the dream thoughts to the dream content, but intersect and interweave many times on the way. In complicated and confused dreams, the impression of dissimilarity between dream-content and dream-thought cannot be entirely ascribed to condensation and to dramatization. There is evidence of the working of a third factor. Freud notes that when he, by means of his analysis, arrives at a knowledge of the dream-thoughts, the manifest dream-content deals with entirely different material from that of the latent dream content. This, however, is merely an appearance which vanishes on closer examination, for Freud finds that all of the dream-content is carried out in the dream-thoughts and that almost all of the dream-thoughts are represented by the dream-content. However, there is still a difference remaining. That which in the dream was clearly and plainly marked as the essential content, must be relegated to a very subordinate rôle among the dream-thoughts, and that which among the dream-thoughts has the claim to greatest attention is the representation of material which is found either not at all in the dream content or is only represented there by a very remote allusion in an uncertain region of the dream. Freud expresses this idea as follows: During the dream work the psychic energy passes from the thoughts and conceptions to which it by right belongs, to others, which, in his judgment, have no claim to such an emphasis or importance, and it is this process which has to do with the concealment of the meaning of the dream and with making the connection between dream-content and dream-thought unintelligible. This process, to which Freud ascribes great importance, he terms "dream-displacement" or *Traumverschiebung.* It would seem that that which is most vivid in the dream-content would be the most important, but according to Freud's theory, it is precisely in an obscure dream element that he finds the direct evidence of the most important dream thoughts.

Displacement plays a very varying rôle. There are dreams in which no displacement takes place; these are clear and intelligible dreams, like the dreams of an unveiled or unconcealed desire. In other dreams, again, not a single particle of the dream thought retains its proper psychic value. Everything important in the dream-thoughts is replaced by secondary matter. A most complete series of transitions can be recognized. The darker and more confused a dream, the more we may count on the factor of displacement. Again, when instead of the original elements—instead of the really pertinent material—indifferent material finds a place in the dream-content, we have merely to do with an act of displacement.

Further, the dream-work, or *Traumarbeit,* fashions the preformed dream-content into a dream-composition. The dream acquires a kind of façade which covers almost all, but not all, of its parts. In this portion of the dream-work, motives become apparent, motives which have their origin in a regard for the comprehensibility of the dream.

The kernel of the problem, says Freud, lies in the displacement. The essential condition of the displacement is a purely psychologic one. It is of the nature of a play of motives or activation of motives. We ascertain the cause of this activation of motives when we realize that we are compelled to break off in communicating the contents of a dream because thoughts present themselves which cannot be revealed—cannot be spoken of to others—without the injury of most important considerations, personal and private. Freud asserts that this is true of the content of every dream; that every dream contains thoughts which necessitate privacy. If, Freud says, he pursues the dream-thoughts *for himself,* he arrives finally at thoughts which surprise him, which he did not know existed in him, and which not only appear strange to him, but are also unpleasant and which he, for this reason, would energetically resist. Freud says that he cannot do otherwise than to suppose that these thoughts are really present in his soul-life (his subconsciousness?), and possess a certain psychic intensity or energy, but because they had been in a peculiar psychologic situation, they could not become known to him. i. e., could not reach his consciousness. He terms this condition *Verdrängung,* suppression. He says he cannot refrain from concluding that between the obscurity of the dream content and the condition of suppression, there is a causal relationship, and he concludes that the dreams had to be obscure in order that the tabooed dream-thoughts should not reveal themselves. The misrepresentation of the dream serves to conceal the latter.

Freud believes that the dream-work, *Traumarbeit*, is one of a series of psychic processes to which the origin of hysterical symptoms, phobias, obsessions and delusions are to be ascribed. Condensation and specially displacement are characters never wanting in the other processes as well. Freud believes that a whole train of phenomena of the every-day life of normal individuals, forgetfulness, unconscious mistakes in speech, in simple acts and other errors, are due to analogous psychic mechanisms.

Freud's therapeutic application of the dream consists in having the patient submit himself to the procedure already outlined, i. e., of allowing all of the thoughts suggested by the dream, no matter what their character, to find verbal expression, and, just as in his method of psycho-analysis, the suppressed, painful or shameful thought thus finds a vent. Freud assumes that even in the deepest sleep a certain degree of psychic activity is present which manifests itself as a watchfulness or guardianship over the sleeper. This guardian-like attention or watchfulness concerns itself among other things with a suppressed desire and forms with the latter the dream, the dream being a compromise of this guardian-like attention and the suppressed desire. Thus is produced a kind of psychic relief for the suppressed desire, for the dream represents the desire as fulfilled.

It is to be noted that the feature of Freud's conception of the dream is, first, its personal, intimate nature, dealing with a subject of such a character that the latter cannot be discussed without injury to the dreamer, without lesion of the proprieties, and second, that the dream always deals with a desire. Freud divides dreams as follows: first, those which consist of an unveiled, undisguised realization of an unsuppressed desire; second, those which consist of the realization of a veiled desire latent and suppressed; and third, those which consist of the realization of a suppressed desire, little or but slightly veiled or disguised. The secret, non-communicable nature of the dream and the desire, veiled or outspoken, constitute, according to Freud's theory, the moving factors of the dream.

Freud's theory, though ingenious, and, I believe, unnecessarily involved, challenges criticism from two points of view; first, as to the secret or sexual content which he declares every dream contains; and second, as to his method.

In discussing Freud's theory, as applied to the unraveling of the psychoneuroses, in a paper read before the Philadelphia County Medical Society some years ago, I pointed out that the first criticism—a truly glaring criticism—which offers itself is the peculiar view which Freud holds in regard to the origin of obsessions. Breuer in his first patient, the patient whose case originally suggested the method, fancied or perhaps did detect in the history a cause of self-reproach or blame which had led to her hysteria, and the unloading or confession of which led to her prompt recovery. At any rate the studies made by his colleague, Freud, have led the latter to some very remarkable conclusions, conclusions to which comparatively few neurologists as yet have been able to subscribe. Freud believes that the various obsessions, hysterical and otherwise, have their origin in some passionate sexual action or aggression of childhood. Obsessions are, he says, always reproaches changed or evolved from the suppression of the memory of reproaches having this sexual origin; in other words, the memory of the sexual action itself, being repulsive or abhorrent, is suppressed, but the feeling associated with the memory persists in the mind and now associates itself with or attaches itself to some other memory or action and that in this way arise the various obsessions. Others than myself have dwelt on the glaring inconsistency of the sexual immaturity of children and the intrinsic biologic improbability of this theory. Perhaps Freud has himself been impressed by this fact, for of late years it would appear that he has retreated to the age of puberty, attempting to save the situation, however, by saying that the memory of these sexual events is projected from puberty into the period of childhood. Whether every dream has a secret or sexual content must be left to the sober thought and honest judgment of ourselves and others; must be left to the testimony of human experience in general. As far as my own experience goes, as far as the testimony of those in whom I have studied the subject of dreams goes, I must come unhesitatingly to the opposite conclusion. It is true that dreams with sexual content do occur, that unquestionably they occur in young persons, especially in young men and are no doubt normal accompaniments of sexual evolution; but that all dreams possess this secret content is certainly not in accord with general human experience, any more than it is in accord with our experience as neurologists that every obsession, for instance, is due to the suppressed memory of a sexual aggression in childhood.

Further, it is extremely probable that Freud by his method suggests the memories of sexual occurrences to his patients; in other words, that he elicits from them a fictitious memory of sexual events in their childhood, of events that have never occurred. Indeed, Loewenfeld gives an instance of a patient of Freud who subsequently came into his (Loewenfeld's) hands.[1] The woman stated to him that the sexual events which she had related to Freud when under his treatment had really never occurred. She declared that the whole thing had been a piece of pure imagination.

Not only does the presumption of a secret content in the dream, sexual in character, challenge criticism, but Freud's method of dream analysis is likewise open to criticism, similar to that which we apply to his method of psycho-analysis of the obsessions. The method that he practices for the elucidation of the obsessions is carried out under a condition which is such as to bring about in the patient a state of actual or borderland autohypnosis. He places the patient, let us remember, on her back; she closes her mind to every possible external impression; she lies perfectly still; concentrates her mind on her thoughts; and then in giving her account of her past experiences is expressly instructed to allow herself to drift at will, to tell everything, no matter what, that enters her mind. It is further admitted that the process is very fatiguing. It may be doubted whether conditions more favorable to autohypnotic states could be devised, and the presumption is justified that there is but little credence to be placed in the saying of a patient in this condition. It is extremely probable—indeed certain in cases of hysteria—that under such circumstances the patient will respond with alacrity to the slightest suggestion, inadvertent or unintentional though this may be on the part of the physician. That confession of imaginary sins, especially sexual transgressions, should be made under these circumstances is not to be wondered at.

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[1] Loewenfeld: Sexualleben und Nervenleiden, 1899, p. 195.

Now the very condition which Freud imposes in the analysis of the dream-content is equally comparable to an autohypnosis, and that under these conditions the material secured is unreliable, is extremely probable. It is presupposed that the mind, in reflecting on the dream, drifts at will without the guidance of what Freud calls the critique—which critique can be freely rendered as the personal equation of judgment. Such a severance of mental function as the conditions of the dream analyses imply, that is, the unrestrained drifting of thought and the suspension of all judgment, is not normal. Such a severance of function implies of itself a state of hypnosis—or a state of mind closely akin to hypnosis, and it certainly seems unphilosophic and unscientific to regard the various mental pictures resulting as representing the undoubted and intrinsic factors of the dream—as representing the essential features and the structure of the dream. There is nothing to justify such an inference, and yet Freud regards it as a foregone conclusion.

It is hardly the function of this paper to enter into a consideration and discussion of the origin and nature of dreams. Suffice it to say, however, that I believe, as does Samuely,[2] that dream conceptions arise just before the sleeper awakens, i. e., just as he is in the act of entering into consciousness. The dream conceptions are part and parcel of the act of awakening. The conceptions furnish the material from which the dream is subsequently constructed. This construction occurs only after waking consciousness has been established. The confused, simultaneously arising dream pictures are then arranged according to time and location, the lacunæ being filled in by the aid of the imagination and reflection. Semi Meyer[3] also believes that the dream history is usually constructed only after the person has awakened. According to Meyer, every dream is something added to the act of awakening. It is a phenomenon dependent on, and is a part of, the act of awakening. There is in every act of awakening an intermediate twilight state of mind, usually very brief, but sometimes prolonged, during which inroads, vague and indistinct, are made on the sensorium from without, and the conceptions thus arising, are, when the patient fully awakens, arranged automatically into some semblance of order and sequence both as to time and space. That long dreams, dreams of complex content and implying long duration of the dreaming act really occupy but a very short period of the dreamer's time has been repeatedly proved. Thus Flux[4] describes a dream in which the period of unconsciousness did not exceed ten seconds, and yet the dream dealt with a shipwreck with all its details, the time necessary for the occurrences being about three and three quarter hours. The truth is that the arrangement of the dream pictures is automatic, begins at once in the act of awakening, and is later often elaborated and dramatized. It is probable that when the awakening occurs quickly, i. e., when the transition to consciousness is sudden and complete, that the dream remains fragmentary. To take such a dream and submit its conceptions to a process, the essential features of which are indistinguishable from those of autohypnosis, may lead to almost any vagary. That the ideas resulting from this method are determined by the personal peculiarities of the individual, by his training, his education and his habits of thoughts; by his desires, his instincts and his sex, goes, I think, without saying; but that one has the right to ascribe to these ideas any value other than this, can be, to say the least, seriously questioned; to go so far as to say that because in one individual dreams usually have, or always have, a sexual content, therefore, we are to conclude that all dreams in all individuals have a sexual content, is, to say the least, not quite logical. To ascribe to ideas which are manifestly secondary abstractions, ideas evolved subsequently to the dream—a causal character, an etiologic value to explain preexisting symptoms, is again not quite logical. To say that the dream analysis of Freud unearths a repressed dream-complex, the unearthing of which gives relief to the patient, is merely to say that the patient dwelling on his dream and induced to speak without hindrance, merely tells the unpleasant, perhaps secret and personal fact or facts of his history which he would have told and constantly does tell without reference to any dream. The danger, however, arises, just as it does in Freud's psychoanalytic method, that the patient will fabricate, involuntarily or perhaps voluntarily, as did Loewenfeld's patient, and recite events that never occurred. Perhaps they are purely fictitious happenings to fill inconsistencies and lacunæ, and yet, arising spontaneously in the patient's mind, may be accepted by the patient as true and find a place among the memories of his actual experiences. Such a patient is, I believe, damaged, just as is a patient who takes away with him after an hypnosis, a persistent suggestion as to fictitious past occurrences.

We are all of us familiar with the relief which patients experience by giving a full account of their symptoms. Sometimes this account, although by no means invariably, embodies the recital of symptoms of a very personal and intimate nature and at such times the recital has all the force of a confession. That the relief of a patient under such circumstances is very great, we all of us know, and we know, too, that a strange and cumbersome procedure, such as is undertaken in a psycho-analysis, namely, the detailed recital of all the events of the patient's life, embodying especially the assumption of active, aggressive and other sexual occurrences in the patient's history, are unnecessary, just as they are painful, distressing and ethically objectionable; surely the dream analysis is alike unnecessary, if it be not, indeed, misleading and futile.

Finally, in the dream analysis, as in the other form of psycho-analysis, both the physician and the patient assume an expectant attitude of mind. The physician already believes, and the patient is involuntarily led to believe, that a cure of the monophobia, agoraphobia or what not, will supervene when a sexual trauma or aggression has been revealed; and it would seem that the more revolting or disgusting the incident unearthed, the greater its power to cure! Surely here is suggestion, involuntary and unintentional perhaps, but none the less suggestion. What also shall we say as to the rôle played by the shame, the self-abasement and the upheaval of the emotions, in the final result? Surely the theory of psycho-analysis commends itself to our understanding as little as does its practice.

Whether dreams ever really play a rôle in the etiology of nervous symptoms must, to say the least, remain an open question. We all know that patients not infrequently awaken from dreams in fright, as witness the familiar example of the nightmare, and yet to ascribe to the nightmare a uniformly sexual character, as does Ernest Jones,[5] is again stretching human credulity beyond the bounds of human experience.

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[2] Samuely: Ztschr. f. Psychotherap., 1909, i, No. 3, p. 150.

[3] Meyer: Ztschr. f. Psychol., 1909, lxiii, 206.

[4] Flux: Brit. Med. Jour., 1901, ii, 13

[5] Jones: Am. Jour. Insanity, 1910, lxvi, No. 3.

That dreams are sometimes followed by symptoms, every alienist knows, but even here it is probable that the dream is itself really a product of the already existing psychosis. Such, for instances, are the cases recorded by Santi di Sanctis.[6] Kazowsky,[7] again, describes a case in which a dream of murder preceded the actual commission of a murder. Penta[8] describes cases in which periods of intense excitement of short duration followed dreams and in one of these cases the dream likewise preceded the murder. Others might be added to this list, but it is safe to say that in these cases the dreams were always symptomatic of the preexisting mental disease and in no sense prodromal.

If, in conclusion, we are asked as to the rôle that dreams play in etiology, we are justified, to say the least, in the inference that that rôle is a very doubtful one; dreams are probably always symptomatic and never causal. Finally also, we may conclude that their symptomatic value is of little consequence.

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THE SO-CALLED ŒDIPUS-COMPLEX IN HAMLET [*]

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Of all Shakespeare's plays Hamlet is the one which has the most peculiar and abiding interest for medical readers. This is mainly so because of the problem of insanity which it presents. This problem has been as gravely discussed by alienists as though Hamlet were a real person and not a mere creature of the imagination. But in a wider sense the play appeals to the student of mental phenomena because of its psychologic, as distinct from its psychiatric, questions. The most accomplished literary critics have thus propounded many theories, and in Germany a whole body of literature has grown up about this question. To attempt even to enumerate these various theories is out of my present range, and I will merely quote one writer in *Blackwood's Magazine,* who in his despair announced that Shakespeare himself could not have written a regular dissertation on Hamlet—and then proceeded to write one himself. But if Shakespeare could not have given us a satisfactory explanation of the Prince of Denmark's mental state, I can hardly be expected to do so either, and I must beg to be excused from the attempt.

My object is not so much to discuss Hamlet as to discuss briefly a recent theory which has been advanced to explain Hamlet. The task is really not of my own choosing, but I was drafted into it by the council of this society, who must have thought I was peculiarly fitted still further to obscure the subject. They probably did not expect me really to pluck out the heart of this mystery, but merely to demonstrate that there are more things in heaven and earth than are dreamt of in my philosophy.

We have come to an era of what may be called subterranean psychology. We are invited to plunge boldly into the subconscious, the "subliminal," and in these dark underground recesses of the mind to search with confidence for the data practically of a new science. The eagerness with which this call has been answered by all manner of men and women is shown curiously in widely divergent tendencies, in medicine, in literature, and in religion; and as a result we have psycho-analysis, Christian Science, the Emmanuel movement in Boston, and the Œdipus theory of Hamlet as promulgated by Ernest Jones. All these tendencies can be classed together in what may be called the cult of Freud.

According to Ernest Jones the whole mystery of Hamlet is to be explained by the theory of Freud's "repressed emotions." This is his thesis in a nutshell. Hamlet is "suffering from an internal conflict, the essential nature of which is inaccessible to his introspection." In other words, the Prince did not know what it was that ailed him. Moreover, Shakespeare himself did not know what it was; the audience has never known what it was; the commentators do not know what it was; nobody knows what it was but Jones, and he has discovered it by the methods of psycho-analysis, applied to the play after three hundred years.

The nature of this conflict is about as follows: Hamlet as a boy had an intense passion for his mother. This was not what the world in its ignorance calls the natural affection of a child for his mother, but it was distinctly erotic: in short, the first manifestation of sexual passion We are assured that this is not uncommon, and that women of a passionate nature frequently inspire this feeling in their young sons. Jones even quotes with approval Freud's dictum that "the mother is the first seductress of her boy."

Hamlet soon learned, however, that this would never do. The conventions of the world, or of "the herd," as Jones calls it, frowned on such erotic emotions of a boy for his mother; consequently Hamlet early learned to "repress" these emotions. Here, you see, we are at once introduced into the Freudian amphitheater. Hamlet has a great store of "repressed" sexual emotions for his mother, which in time he forgets, but which are ready to assert themselves when the opportunity offers.

As a natural corollary to this youthful experience, Hamlet had developed a feeling of jealousy for his father. But this feeling also he had instinctively "repressed," until it was forgotten, relegated to the limbo of the subconscious; and in its place had even grown up a strong affection for him, as manifested in the play.

This being the state of Hamlet's subliminal mind, all these "repressed emotions" would probably have remained quiescent, deeply buried many fathoms deep in the subconscious strata of his psyche, if it had not happened that his uncle killed his father and promptly married his mother. The effect of this cataclysm was stupendous, and I confess that the psychologic processes as expounded by Jones are from this point somewhat difficult for me to follow, although I have read his paper very carefully twice over. As I understand the psychoanalysis, however, the result was somewhat as follows:

Hamlet had laid on him the task of avenging his father's death, and, as we all know, began that remarkable career of vacillation and declamation which leads no whither, and which constitutes the mystery of the play. Now, according to Ernest Jones, this is all to be explained by the surging up of these old "repressed emotions." Just why or how, I confess I do not see; but we are assured that the thought of killing his uncle, who stands as a sort of rival to him in his mother's affections, sets all this underground machinery to going (if I may be pardoned the term), and that this is so intolerably painful to Hamlet that it paralyzes his will and arrests his hand. The concatenation of events is not at all plain to me, but I give it as accurately as I am able to interpret Ernest Jones. The argument seems to require that there is some deep and obscure association of ideas in Hamlet's mind, which he himself does not recognize, but which evokes from his subconscious memory painful "repressed emotions" which were inspired in him in childhood by his mother, and which were sexual in tone. Whether this is genuine science or whether it is mere vulgar fantasy, I leave to the consideration of others.

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[*] Read before the Philadelphia Neurological Society, Feb. 24, 1911.

[6] Santi di Sanctis: Jour. de neurol. et d'hypnol., 1897, Nos. 23-24, p. 473.

[7] Kazowsky: Neurol. Centralbl., 1901, xx, 440.

[8] Penta: Riv. mens. di psichat. fas., 1902, p. 324.

Ernest Jones calls this the "Œdipus-Complex," a term which he also borrows from Freud, because he sees in it a train of psychologic phenomena similar to what is seen in the old Greek legend of Œdipus. Let us see.

The "Œdipus Tyrannos," one of the two dramas by Sophocles which embody the most familiar form of the legend, is one of the masterpieces of Greek tragedy. The hero is the son of Laius, king of Thebes, and of Jocasta, his wife. An oracle had warned Laius that he would meet his death at the hand of a son of his own; consequently Œdipus at his birth was given by his father to a herdsman to be exposed to die on Mount Cithæron. But the infant was rescued, and was reared by Polybus, king of Corinth, as his own son. When he grew to manhood he was taunted with being a supposititious child, and he repaired to Delphi to consult the oracle. The god warned him that if he returned to his native country he would kill his father and commit incest with his own mother. To avoid this fate he resolved to shun Corinth, thinking that to be his native country. Wandering through Greece, still ignorant of his own origin, he happened to meet his father, King Laius, attended by only a small retinue, and in an altercation he killed the king, of whose identity he was ignorant. At this time a monster, called the Sphinx, sent by Juno to ravage the kingdom of Thebes, proposed the celebrated riddle, on the correct solution of which depended the redemption of the city. Œdipus hastened to Thebes, answered the riddle, and was proclaimed king. To complete the horror of the situation he straightway married the widowed Jocasta, his own mother, both of them being entirely innocent, for they were ignorant of their mutual relationship. By her he had children, one of whom was his devoted daughter, Antigone. He was thus caught in the meshes of an appalling tragedy.

The drama of Sophocles deals entirely with this situation, and unfolds it with all the intensity and concentration which the unities of Greek tragedy had developed into a supreme art. No one can read this drama, even in an English translation of to-day, without being profoundly moved with the simplicity, the pathos, and the accents of an irrevocable doom which speak to us across the long lapse of more than 2,000 years.

There is nothing in this tragedy by Sophocles to invite the modern methods of psycho-analysis. There is nothing in it that I can discover of the subliminal or the subconscious or the play of "repressed emotions." It was contrary to the Greek genius to deal in such obscurantism. All is as clear and as open as day. The audience knew the story well; it was only the hero and his mother who were ignorant of their horrible involvement; and as an acute critic has pointed out, it is this very contrast between the attitude of the audience and the ignorance of the hero that gives to the tragedy a singular note of the irony of fate. When the final revelation comes it comes as with the climax of doom: Jocasta kills herself, and Œdipus puts out his eyes and goes forth a wanderer on the earth, led by the devoted Antigone.

I fail to see in this tragedy any essential resemblance to the situation in Hamlet. The Prince of Denmark was not involved in any mystery arising out of mistaken identity. He knew perfectly who his mother was, and she knew that he was her son. This alone is enough to stamp the radical difference between Hamlet and Œdipus. The theory that Hamlet had any "repressed emotions" of amatory passion for his mother, is entirely gratuitous, and outrages every sentiment of nature as well as every canon of art. There is no expression in the play that I know of that supports such a theory, and it is only by reading it into the play between the lines by a process of artificial psycho-analysis that such a monstrous theory has its origin. It is supported neither by science nor by literary criticism, and of all the theories yet sprung to explain the so-called psychology of Hamlet it is the vilest and the most far-fetched.

The emphasis laid on sexual ideas by Ernest Jones in his paper is highly characteristic of the whole Freudian school. They seem absolutely obsessed with ideas of sex. They cannot get their minds out of this channel; and it would be an interesting test of the value of their own psycho-analytic methods for somebody to turn their guns on themselves, and see to what repressed sexual emotions in their own subliminal strata is due this over-emphasis of a somewhat forbidden subject. Can it be that the whole Freudian phenomenon is a form of sexual neurasthenia breaking out among a class of idealistic men and women with a tendency to scribble?

I do not pretend myself to pose as a critic of Shakespeare, but there are some thoughts which I offer in conclusion, with the more confidence as they are not entirely my own. I do not believe myself that there is nearly as much of a profound mystery in Hamlet as the critics and commentators are disposed to see. They are looking for something which is not in the play, and they have consequently wrapped it in unnecessary obscurity. Mr. Furness, of this city, the most eminent of living Shakespearian commentators, sweeps the whole problem of Hamlet's insanity aside by saying that he was neither insane nor pretended to be insane. It is impossible to classify his insanity, or to make it accord with our scientific ideas.

As a dramatic writer, moreover, Shakespeare had his faults. In common with all English playwrights he ignored the law of unities as observed by the Greek dramatists. A comparison of Hamlet with the Œdipus of Sophocles makes this apparent. The Greek holds the situation thoroughly in hand and goes straight to the climax, but the climax in Hamlet is lame and unsatisfactory.

But in my opinion the most glaring inconsistency in Hamlet is the age of himself and his mother. He is represented as a man of thirty; this at once must place his mother well along in middle life, and yet she is presented as a woman in the full bloom of her sexual charms. This bears directly on the subject of this paper.

All readers feel the fascination of Hamlet. His personality has appealed to men and women far more than any fictitious character in modern literature. I believe this is the keynote of the alleged mystery and of the romance which surround him. His grace, his personal magnetism, his melancholy, his philosophizing, his wit, his princely station and bearing, his love for Ophelia, his unhappy destiny, have all served not only to attract but to dazzle mankind. A discerning critic has said that the deep and permanent interest is in the conception of Hamlet himself rather than in the plot. In other words, Hamlet is greater than the play. No theory is necessary to explain this: it is simply Shakespeare's transcendent poetic art which has presented us with a complex and lovable character.

If Shakespeare had his faults as a technical dramatist, we must remember that he was simply writing for the entertainment of a sixteenth century English audience. He was not writing history, or biography, or science, or metaphysics, and least of all was he indulging in any process of psycho-analysis. Probably no one would be more astonished than he at the theories of Freud and his followers. To take Hamlet and attempt to pump out of him a whole lot of "repressed emotions" of sexual love for his own mother, is not only disgusting, but is no more sensible than to stand by the side of a beautiful marble statue, and, with note-book in hand, to pretend to jot down the story of the statue's subconscious life as imbedded in the depths of its marble head.

Mr. Furness has somewhat tartly said that there has been much commenting on Shakespeare which is a nuisance and a weariness of the flesh. This was even before the appearance of Ernest Jones' essay, or of my present paper.

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CHRONIC GLANDERS IN MAN

REPORT OF A CASE: PATIENT TREATED WITH GLANDERS VACCINE. APPARENT CURE

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In 1906, C. D. Robin of the Royal Victoria Hospital, Canada, reported 156 cases of chronic glanders, collected from medical literature. Since this excellent review of the subject there have been reported but four definite cases, accessible to me—one by Post and one by Sieur in 1907, one by Dr. A. T. Bristow of Brooklyn, and one recently shown at the New York Surgical Society by Dr. Hitzrot. Several cases of acute glanders have occurred, however, and have been chronicled.

After reading Robin's article and noting his conclusions, drawn from an exhaustive study of his many cases, one is forcibly impressed by two salient facts; first, that chronic glanders in man is an exceedingly rare disease, unless many mistakes in diagnosis are made; second, that the mortality is extremely high, only 6 per cent. of the 156 cases reported being positively known to have resulted in a cure. These two facts alone seem to offer sufficient justification for the publication of the following case, which came under my observation in Bellevue Hospital in the service of Dr. J. D. Bryant, to whom I am greatly indebted for the privilege of studying and recording this case as one of those in which an apparent cure was obtained, the patient remaining free from the disease for a period of eighteen months. No further report of the case is possible, as the patient has returned to his native home.

In presenting this record the rule used both by Robin and Bollinger is employed to differentiate between the chronic and acute form of glanders, namely, the existence of the disease for six weeks or longer. In reporting this case, also, I have refrained from a positive statement relative to actual permanent cure, realizing that it is very difficult to state definitely just when a patient with glanders can be considered cured, as so many of those patients reported as affected, even after many months, and in a few cases after many years, finally succumb to the disease.

This patient, as stated above, had remained free from any symptoms of glanders for eighteen months, was in good health, doing hard work daily, and had also been under close observation. This patient was treated with glanders vaccine, which proved of inestimable value in controlling the disease. The vaccines were made by the New York Board of Health from a glandered horse and kindly furnished to me by Dr. W. H. Park. These vaccines were not standardized, and so the actual number of bacteria is not definitely determined, but estimated at fourteen to twenty million per cubic centimeter. The report of the case follows:

History.—M. M., aged 34, a Pole, a cement worker, was admitted to Bellevue Hospital, Oct. 20, 1908. There was nothing in the family history which could possibly have had any bearing on his illness. The patient's habits were good, he drank four or five glasses of beer daily, ate and slept well, and worked very hard. He was employed in making cement walks; was exposed to wet and cold a great deal, his feet often becoming wet and his clothes soaked by rain. In no way was he ever directly associated with the care or handling of horses, nor was any member of his family. No other member of his family was ill.

Previous Illness.—One year previous to his admission to the hospital the patient had had a "stitch" in his right side. He was ill about one week and made a good recovery, except that occasionally he had a slight cough without expectoration. Generally speaking, however, he enjoyed fair health, working each day and eating well.

Present Illness.—Four weeks previous to admission, the patient's clothing became wet through from exposure and the same evening he had chills and fever, followed by profuse sweating. He had similar attacks three or four times weekly previous to his admission. One week after the first chill, there appeared a swelling over the right forearm, followed the next day by one over the left forearm and right thigh, without any association of pain or tenderness over them.

Clinical Data on Admission.—When the patient entered the hospital he had a temperature of 100.2 F., pulse 120, respiration 24. Blood: Leukocytes, 11,400; polynuclears, 78 per cent.; lymphocytes, 17 per cent; transitionals, 2 per cent; basophils, 2 per cent; eosinophils, 1 per cent. Urine: amber, clear, urinous odor, sp. gr. 1.022, faint trace of albumin; many leukocytes, amorphous urates, and a few hyaline casts.

General Physical Examination.—The patient was of medium frame and poorly nourished; mucous membranes clean, but anemic; pupils equal, reacted normally to light and accommodation; tongue heavily coated, slightly tremulous; pulse regular, of moderate tension. There were a few sibilant râles over base of the right lung; no nasal discharge nor expectoration; inguinal and axillary lymph-nodes palpable; reflexes normal.

Lesions.—Small abscess over radial side of middle third of left forearm; another on ulnar side of right forearm near elbow; another on posterior surface of calf of right leg, five inches below knee, and still another about six inches in length over posterior aspect of left thigh at the middle third. There were no signs of inflammation referable to these tumors and no pain nor tenderness associated with them. These abscesses, which were deeply situated in the muscles, were opened under cocain anesthesia, the cavities irrigated with mercuric bichlorid solution and drainage instituted. The pus was of a chocolate color, fairly thick, with no odor. The report of the findings obtained by examination of the pus is given in full below by Drs. Norris and Pappenheimer of the Pathological Department of Bellevue:

PATHOLOGIC REPORT

"A deep abscess situated on the posterior and outer aspects of the middle third of the right thigh was aspirated with a sterile syringe, about 5 c.c. of pus being withdrawn. Morphologic examination of this pus on smears and in hanging drop revealed no microorganisms.

"Cultures made on slanted and coagulated Loeffler's blood-serum, and on agar tubes, remained sterile after a week in the incubating oven. With this pus two guinea-pigs were inoculated, one subcutaneously, the other intraperitoneally.

"November 7, seventeen days after inoculation, the pig inoculated subcutaneously was found greatly emaciated, and had developed at the site of inoculation an abscess of considerable size, say 3 cm. in diameter. The abscess was incised, and the pus evacuated. Smears made from this pus revealed a few Gram-negative rods, which closely resembled in their morphology the *Bacillus mallei*. Besides these rods of distinctive morphology, there were found a number of involution and degeneration forms, and of globules and round masses, not staining by Gram's method, but taking on an after-stain with fuchsin.

"Cultures made from this pus yielded in forty-eight hours, on slant glycerin-agar, a growth of Gram-negative rods, resembling the glanders bacilli in morphology. With this pus, an emulsion of a glycerin-agar slant was made and inoculated into two large male guinea-pigs, each pig receiving approximately half of the agar culture emulsion.

"The pigs showed a marked and prompt reaction after inoculation, and the morning following the inoculation both pigs were very ill, with hair standing on end, extremely sensitive to the touch, especially on the peritoneum, and with greatly enlarged testicles. The pigs were found dead the following morning, approximately thirty-six hours after inoculation.

"Examination of both pigs showed a diffuse general serofibrinous peritonitis, and the typical exudate on the tunica vaginalis. The organism was found in the exudate of both guinea-pigs in smears, and by culture. The two guinea-pigs inoculated with the human pus were greatly emaciated, and were chloroformed November 13, in a moribund condition, twenty-three days after inoculation. The pig inoculated subcutaneously showed no lesions in the gross beyond the abscess at the site of inoculation in the skin. The pig inoculated intraperitoneally showed a number of well-encapsulated abscesses in the peritoneum and retroperitoneal lymph-nodes, and in the skin at the site of the puncture of the needle, and abscesses of the liver.

"The bacillus which was isolated corresponded in all morphologic characteristics with that of the *Bacillus mallei*. It decolorized by Gram's stain. The cultural characteristics corresponded in every way to that of the glanders bacillus, giving a characteristic growth on potato and blood-serum.

"Microscopic examination of the tissues of the lesions of the two guinea-pigs inoculated with human pus show the typical lesions of glanders, with numerous characteristic bacilli."

A blood-culture made also at this time proved positive.

The patient ran an irregular temperature till Nov. 5, 1908, when he insisted on returning home.

In December of the same year the patient was seen by me, he in the meantime having received treatment in one of theNew York dispensaries. At this time the wounds were all healed and I decided to show him before the Bellevue Alumni Association in February, 1909, but when he was seen again, in January, 1909, two of the old wounds were discharging pus, the patient was having some elevation of temperature, chills and sweats. He was admitted to the isolation ward at Bellevue in this condition on Jan. 22, 1909, with a temperature of 102 F., pulse 108, respiration 24. He had a leukocyte count of 12,000; polynuclears, 78 per cent.; lymphocytes, 20 per cent.; basophils, 1 per cent.; eosinophils, 1 per cent. Staphylococci were found in smear and culture made from pus obtained from arm and leg, but no *Bacilli mallei*. No *Bacilli mallei* were found in the sputum. The agglutination test was negative.

Treatment.—January 29, 8 minims of glanders vaccine were injected into the gluteal region. In six hours the temperature rose from 100 to 104 F., pulse from 88 to 124, the patient had a severe chill and sweat, and there was considerable reaction in the region of the injection. The temperature dropped gradually to normal in three days and inflammation about the gluteal region subsided. This dose was considered too large and so on February 5, 4 minims were injected as before, the temperature rising to 102 F., and the pulse 108.

February 8, 4 minims were again injected; the temperature rose to 105.8 F., with chill and sweat. An interval of five days was then allowed before another injection of 4 minims was made. The temperature rose to 100 F., and pulse to 96.

February 21, 4 minims were injected. The temperature rose to 104.8 F., pulse to 118. About this time the patient was shown at the Alumni Association. At this time his general condition was markedly improved, but there was a slight discharge from the wound in the right forearm.

The patient insisted on going home and was subsequently treated by me at Bellevue Hospital Dispensary as follows: March 1, 1909, 4 minims of vaccine were injected. April 6, when he returned all wounds were healed and the patient's general health was excellent. He was given 4 minims, however, and again on April 20, May 4, May 18, June 4, and June 21, respectively, on which occasions there was very little, if any, reaction to the injection. Subsequently the patient was seen by me at different times, the last time being eighteen months after all his symptoms had disappeared. In October, 1910, in endeavoring to locate the patient, I was informed that he had returned to his native country, and so no further report is possible.

CONCLUSIONS

There are several points in connection with this case and chronic glanders as a whole which I wish to bring forward.

1. Cases of chronic glanders can easily be overlooked unless one is constantly on the lookout for the disease.
2. Multiple abscesses, especially on the extremities, without definite cause, should excite suspicion, as Robin has shown that in 80 per cent. of cases multiple abscesses occur.
3. In this case there was no direct association with horses.
4. The point of entrance of the infection was unknown in this case, no abrasion on the body being present and no history of a wound being obtainable.
5. There was never any nasal discharge.
6. The patient remained apparently cured for six weeks and then showed a return of symptoms.
7. No bacilli were found in the sputum.
8. Extreme exposure to bad weather seems to be a predisposing cause.
9. This case was proved to be one of glanders by laboratory methods and by reaction to the vaccine injections.
10. This patient was apparently cured by vaccine injections.

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CASE OF CHOKED DISK AND PROGRESSIVE BLINDNESS DUE TO SARCOMA OF THE BRAIN

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Some years ago I reported in part[1] a case of choked disk probably due to brain tumor. Recently I have heard of the termination of this case in operation and death, and I consider the complete case of enough interest and importance to submit for publication again. In giving the early history of the case I shall draw at length on the original record included in my earlier report.

Patient.—A man, aged 22, first came under my care Dec. 11, 1906, in the clinic of Dr. W. E. Lambert, New York Eye and Ear Infirmary; he stated that two weeks previously he had been "struck blind" at the car-barns, where he was waiting to take out the car of which he was conductor, but recovered the vision of his left eye about five minutes later to such an extent that he was able to take charge of his car for about two hours longer, when he was allowed to go home; he never regained the vision in his right eye. He had had a burning pain in the eyes just after the stroke of blindness, but had slept well that night, and since then had had no pain of that character. His vision at the time of examination was fairly clear but frequently blurred for a moment, giving him a depressing sense of insecurity and of impending blindness. His history previous to the sudden loss of vision was as follows: Three years before, and again, two years before, he had attacks of unconsciousness, epileptoid in character, during the night; one year before he had attacks of transient numbness of the right face, arm, body and leg, beginning in the arm and lasting a few minutes.

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[1] Thomas, J. B.: Long Island Medical Journal, November, 1907.

Examination.—Right Eye: Total blindness; the optic nerve-head was yellowish gray, raised by swelling about 1 mm. above the surface of the retina; the central vessels were much engorged; there were several bright white splashes of retinal atrophy between the disk and the macula. This eye had probably been blind for several months, but the fact was not recognized by the patient until his other eye failed.

Left Eye: Vision 20/40. The optic nerve-head was raised about 1.5 mm. above the retina, and its borders were blotted out by a yellowish exudate extending into the retina; the central vessels were intensely congested, and the center of the disk was covered by a network of congested capillaries. The whole appearance was that of an acute process as compared with the atrophic changes in the other eye; the field of vision was about normal; both pupils were dilated and reacted to light, accommodation and convergence, though feebly at times; spontaneous oscillations of the pupils made it difficult to determine the pupillary reactions but the results were verified by several examinations made on different occasions.

Possible foci of infection were sought in the ears, nose, and accessory sinuses, but with negative results. An examination of the urine was negative. There were no traces of syphilis, and the patient denied having any venereal disease.

Treatment and Course of Disease.—After about three weeks' treatment with large doses of the iodid of potassium without improvement, the patient was given daily hypodermic doses of pilocarpin, beginning with gr. 1/12, and finally reaching a daily dose of gr. ¼.

Mercury and iodids were given by mouth at the same time. After three weeks of this treatment the patient was discharged from the wards. The exudate about the optic disk was more circumscribed and the central vision was a little more acute, but there still were frequent momentary lapses of vision. The field of vision was moderately contracted.

About Feb. 1, 1907, the headaches became more severe and the patient had occasional attacks of vertigo. His central vision was still 20/40, but he was more often subject to momentary lapses, and his field of vision was becoming ominously contracted. The consensual pupillary reactions were examined carefully on several occasions and found to be positive, though feeble. The tendon reflexes were normal, and the function of the cranial nerves normal: there were no areas of anesthesia, no symptoms of acromegaly; the temperature sense was normal.

Although there were no motor or other localizing symptoms on which to base a diagnosis of cerebral tumor, it was thought justifiable, in view of such marked symptoms of intracranial pressure as progressive choked disk and persistent headache and vertigo, to advise a decompressive operation for the relief of pain and with the hope of arresting the strangulation of the optic nerve fibers of the left eye. Both operation and lumbar puncture were refused.

By the third week in February the frontal headache and attacks of vertigo were still more severe. The patient appeared dazed at times like one awaking from a deep sleep; his vision had fallen to 20/100, and his field was telescopic.

The patient then ceased to visit the infirmary, and I lost track of him until April 10, 1907, when I examined him in Bellevue Hospital, by the courtesy of Dr. Alexander Lambert, in whose wards he had been treated for several weeks. The only trace of vision remaining was a slight and doubtful perception of light when flashed into the macular region of the left eye. He had frequent intense headaches, and vomited a little every day. Both pupils reacted feebly to light; the consensual reactions were doubtful. There was slight, if any, change in the swelling of the optic nerve-head. He was taking 150 gr. of potassium iodid daily for the relief of the pressure symptoms.

Operative Findings.—The patient was soon removed from Bellevue by his parents and the next news I had of him was that he had been operated on Nov. 26, 1907, at the City Hospital, service of Dr. H. D. Collins, to whom I am indebted for the final data in the case. A tumor was found in the cortex of the brain, about 2 inches in diameter, "lying partly in the posterior part of the left frontal and anterior part of the left parietal region." The tumor was diffuse and could not be enucleated. The patient died within a few hours after the operation; no autopsy was permitted. The laboratory reported the tumor as a "large round-celled sarcoma, very vascular."

Although there are several gaps in the history of this case and no post-mortem examination could be secured, it constitutes a valuable unit in the statistics of optic neuritis and brain tumor.

The case demonstrates the value of optic neuritis as a very early sign of brain tumor; it developed in this patient at least four months before the appearance of other distinctive symptoms.

Progressive narrowing of the field of vision in optic neuritis is of evil omen, although the central vision may remain nearly normal and the appearance of the nerve-head show no change. This fact is familiar to the ophthalmologist, but not always appreciated by the general practitioner or the surgeon.

The experience of my patient gives one courage to advise the decompression operation early for the relief of impending blindness before the appearance of motor or other localizing symptoms.

Dr. Saenger, the eminent Hamburg neurologist, said in his address[2] before the American Medical Association at St. Louis in 1910, that he preferred to postpone a decompressive operation until, with choked disk, the vision begins to show impairment. By this I infer that he refers to peripheral as well as central vision. Dr. J. A. Bordley, Jr., of Baltimore, discussing Dr. Saenger's paper and speaking as a collaborator of Dr. Harvey Cushing, said that there was no change in the optic disk with which he was familiar, from the active stage of hyperemia to the later stages of atrophy, in which a decompression operation was not advisable. Dr. J. Herbert Parsons of London, in discussing the same paper, stated that the advisability of surgical interference in these cases, and the time of operation as well, should be determined by the ophthalmologist rather than by the neurologist; for the only palliation in many of these cases is the retention of vision during the rest of the life of the patient, which may last for a period of months or even years. The neurologist is inclined to wait so long for the more definite and convincing focal symptoms that he often delays the palliative operation until the optic nerve fibers are irreparably injured. That such conservatism is unnecessary and is contra-indicated is proved by the experience of our best brain surgeons and the case is strongly stated by Dr. Saenger as follows: "Palliative trepanation of the skull according to the modern standing of surgery, in the hands of a skilful surgeon who has experience in neurologic work, is almost without danger and an extremely beneficial operation, which I should recommend in every case of inaccessible brain tumor, in order to ease the torments of the patient, and above all to save him from impending blindness."

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[2] Saenger, Alfred: Choked Disk in Its Relation to Cerebral Tumor and Trephining, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1100

Viewing my case history in the light of some of the conclusions reached by Leslie Paton[3] in his study of 400 cases of brain tumor, the following facts may be noted:

1. The tumor was precentral and the accompanying optic neuritis was very severe. Paton concludes that precentral tumors are nearly always associated with a fairly severe neuritis, whereas postcentral tumors are nearly always associated with a moderate neuritis. It is unnecessary to remind the oculist that the severity of the optic neuritis should be judged not so much by the loss of vision as by the height of the swelling of the disk, turgescence of the retinal vessels, the extent of hemorrhages and patches of exudate.
2. The eye on the opposite side of the tumor was first affected.
3. The difference in severity of the optic neuritis in the two eyes could not be noted because the process in the right eye had begun the atrophic stage and in the left eye was at the height of the acute stage when the patient first came under observation. Both the second and third signs as noted above are untrustworthy, according to Paton. In about one-half of his cases a difference in the severity of the neuritis in the two eyes was observed, but the more severe neuritis often occurred on the opposite side from the tumor.

REPORT OF A CASE OF ANENCEPHALUS

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PARKER, S. D.

The following report of a case of anencephalus presents some points of interest.

Mother's History.—The mother, white, American, aged 42, was married at 17 and had nine children. Twenty-two years ago, she gave birth to her second child, a hydrocephalous female infant. She stated that she had unusually difficult labors with all her female children.

Present Confinement.—Labor occurred Jan. 29, 1911. On examination I found the abdomen unusually large, the umbilical region being rather flat, and the sides fuller than ordinary. The limbs of the fetus could be felt on the left side. By bimanual examination, a water sac could be felt, filling the roomy vagina and projecting from a partly dilated cervix. Combined version having failed, I anesthetized the patient, dilated the rigid os manually, cut the tough membrane, performed podalic version, and delivered an anencephalic fetus, which lived but a moment after birth. I estimated the amount of liquor amnii at nearly 4 gallons. The third stage of labor was normal. The placenta showed no abnormality, but the umbilical cord was about a foot long, as thick as a man's thumb, and markedly congested.

Description of Fetus.—The child, a female, weighed about 6 pounds and was well developed, except the head, which was hardly larger than a small orange. The external tissues were lacking over a space extending from just above the supra-orbital arch of the frontal bone to the superior nuchal line of the occipital and from the zygomatic process of the temporal bone on one side to the corresponding point on the opposite side. The sunken brain was exposed and showed cherry color through the delicate membrane covering it. The convolutions were very indistinct, except over the frontal lobes, which were elevated, round, and about half as large as a small English walnut. The mouth, chin and cheek, and the lower part of the nose were normal, but the root of the nose was decidedly flat and the eyeballs were protruding. There was a strip of hair about half an inch wide around the neck. Unfortunately no necropsy was permitted.

The case presents the following points of interest:

1. The birth of two abnormal fetuses from the same mother at an interval of twenty-two years, all the other children being normal. Edgar says of hydrocephalus: "It has been observed to occur several times in children of the same mother." I have failed, however, to find any reference to a mother giving birth to a hydrocephalous child at one time and to an anencephalous child at another.
2. Both of the monsters were females. Is this merely a coincidence?
3. A possible relation of hydramnion to anencephalus. J. C. Webster gives anencephalus as an etiologic factor for hydramnion.

REPORT OF A CASE OF BRONCHOPNEUMONIA, SHOWING POSITIVE BRUDZINSKI NECK AND COLLATERAL SIGNS

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In view of the cases reported by Brudzinski and Morse, in which Brudzinski's neck sign was constantly absent in all diseases other than those of the nervous system, I believe that the report in my case will be of interest. Before proceeding, however, to the history of the case, I shall briefly describe these signs:

Brudzinski,[1] while trying to test the rigidity of the neck in a child suffering from tuberculous meningitis, observed that flexion of the neck caused the legs to become flexed on the thighs, and the thighs on the abdomen. He followed this observation up in other cases and found this sign to be positive in 95 per cent. of children ill with tuberculous meningitis, and in 100 per cent. of those ill with either cerebrospinal, serous or pneumococcus meningitis. The sign was found to be absent only in the late comatose stage (*état agonique*) of tuberculous meningitis.

Brudzinski found this sign present in one case of mongolian imbecility, in one case of meningism, and in four cases of arrested development. He never found the sign to be positive in any other acute disease, or in normal cases.

Morse,[2] who has examined 400 patients, agrees with Brudzinski.

TECHNIC TO ELICIT "NECK SIGN"

The head is forcibly flexed with the left hand, while the child is lying flat on its back; with the right hand, pressure is exerted on the chest to keep the child from being lifted. If the sign is positive, both legs will flex on the thighs and the thighs on the abdomen.

The identical collateral sign consists in flexing one leg on the thigh and the thigh on the abdomen when the opposite lower member will assume the same position.

With this brief description I shall proceed to the history of my case.

History.—Baby B., aged 9 months, had a normal but difficult birth; no instruments were used. It had been artificially fed since birth. Stools passed twice daily, yellow, no curds. Nutrition was good. Family history is negative. There is a history of scarlet fever (?) three weeks before I saw the child. The infant became suddenly ill on Jan. 27, 1911; the mother observed fever and cough.

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[3] Paton, Leslie: Brain, 1909, xxxii, No. 125.

[1] Arch. de méd. des enfants, 1909, xii, 745.

[2] Arch. Pediat., 1910, xxvii, 561; Northrup: New Reflex Signs in Meningitis Diagnosis, The Journal A. M. A., Jan. 14, 1911, p. 114.

Physical Examination.—The head was abnormally shaped, the left occipital region sloping downward and being depressed. It had been so since birth. The anterior fontanelle was one-half inch wide; there was no bulging or pulsation. No flatness could be elicited over the skull. The tongue was coated. Prostration was intense. Respiration was rapid, but not accompanied by pneumonic grunt or dilation of the alæ nasi. The pulse-respiration ratio was 2½ to 1. The lips were slightly cyanosed. There was slight rigidity of the muscles of the neck. The chest showed diminished expansion on the left side. There was no dulness, and neither râles nor bronchial breathing, though on the third day small mucous râles and bronchial breathing could be made out in the lower midaxillary region on the left side. The abdomen was not large, was rather soft and flabby. The spleen and liver were slightly enlarged. Heart action was rapid but there were no murmurs.

Reflexes: The pupils were normal and reacted to light; there was neither nystagmus nor ptosis of the lids. Brudzinski's neck and collateral signs were present. Kernig's and Babinski's signs were also present.

All these signs were elicited up to the third day. Between the third and seventh days I did not try to obtain them. On the seventh day the temperature was normal and these signs were no longer obtainable.

The temperature ranged between 102.5 to 104 F.; respiration ranged from 65 to 90 and was irregular; pulse varied from 160 to 200. The child made an uneventful recovery.

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THE TREATMENT OF CANCER WITH BODY FLUIDS AND CANCEROUS ASCITIC FLUID

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This paper is a report of the work done at the Massachusetts General Hospital, under the direction of the Cancer Commission of Harvard University, during the months from February to September, 1910, inclusive, on the treatment of inoperable cancer with the various normal and abnormal body fluids and with cancerous ascitic fluid.

This line of work was suggested by the results obtained by Hodenpyl of New York, which were reported in February, 1910.[1] The purpose of the present investigation was twofold: (1) to determine whether any curative properties existed in the ascitic fluids of cancerous patients; and (2) to determine what effect the various normal and abnormal body fluids, non-cancerous in origin, had on the cancer patient or his tumor. The theory advanced by Hodenpyl in regard to the action of the fluid in his apparently spontaneously cured patient, was along the lines of other theories of immunity. This theory was that the patient in this case must have manufactured within herself some substance in the nature of an antibody, which was detrimental to the growth of her cancer and which eventually caused its retrogression. Subsequent autopsy in this case, however, showed that the patient eventually died of metastatic cancer not demonstrable during life. Weil, in a subsequent report of the analyses of Hodenpyl's fluid and fluids from other cancerous and non-cancerous cases, was unable to find, by any biologic or chemical test, any antibody or any specific substance in any of these fluids whereby they could be differentiated from one another. The nature of the action of Hodenpyl's fluid on cancer remains, therefore, unexplained. Hodenpyl believed that in his case there was produced a specific antibody for the cancer cell. Whether that be true or not, we know of many cases in which the patient resists the inroads of cancer for many years, and MacKay[2] in England has collected from the literature nearly fifty authentic cases of more or less complete spontaneous retrogression of cancerous growths. Spontaneous retrogressions of various tumors, including cancer, are known to occur, but the process by which this is brought about has not been determined. We can conceive, however, of the production in the body of some substance which acts on the tissues surrounding the tumor so that the stroma necessary to the sustenance of the tumor is made to degenerate, possibly by the development of a connective tissue barrier which cuts off its nutrition, or of a substance which acts as an antibody against the cancer cell or its toxins. It is, therefore, not unreasonable to suppose that the cancer patient, as well as the patient with an infection, can manufacture substances which tend to retard the cancerous process. With this theory as a working basis the present clinical experiments were undertaken.

The cancer patients of one group (the group which comprises the main part of this study) were treated with ascitic fluids obtained from patients with cancer in all stages of the disease. An effort has been made to obtain, as far as possible, ascitic fluids from patients resistant to their disease, with the idea that the amount of antibodies per cubic centimeter of fluid in these cases would be larger than in very active or non-resistant cases.

In a second and smaller group, cancer patients were treated with the various normal and abnormal body fluids, other than cancerous fluids, in order to determine their effect on the cancer patient and his disease. In a third group, untreated patients were watched coincidentally for the purpose of comparison with the series of patients treated with the cancerous and the non-cancerous fluids. With these two classes of controls a satisfactory check could be made on the patients treated by the cancerous fluids. The fluids used in the second series were:

1. Normal blood-serum.
2. Hydrocele fluid.
3. Spermatocele fluid.
4. Ascitic fluid from a case of alcohol cirrhosis.
5. Ascitic fluid from a case of incompetent heart.
6. Pleuritic transudate resulting from broken compensation.
7. Pleuritic transudate: non-tuberculous in origin.

Bile, cerebrospinal fluid and chyle have not been used.

None of these fluids, except spermatocele fluid, which exerted a noticeable stimulant effect, especially on females, has had any beneficial effect on the cancer patient or his cancer so far as observed.

A series of ten patients (later treated with the cancerous fluids) was given a trial of from two weeks to one month with these non-cancerous fluids. The latter were given mostly in large doses so as to get all the effect possible. No local symptoms in the tumors, such as were witnessed with the cancerous fluids, or constitutional reactions, were witnessed even with doses of 60 c.c. of any of these fluids. Normal blood-serum was given only in small doses of from 1 to 5 c.c., and gave none of the phenomena of anaphylaxis. In one or two cases a slight rise of temperature was recorded after the largest doses of fluids and also after a 5 c.c. dose of blood-serum. Leukocyte counts were not recorded in this series. It is conceivable that a continuance of the largest doses over a longer period might produce some constitutional reaction. As no beneficial results were seen in the cancer patient or his tumor after one month, this series was discontinued, as it seemed reasonable to suppose that the time was sufficient for the appearance of some favorable or unfavorable symptoms.

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[1] Med. Rec., New York, Feb. 26, 1910, p. 359.

[2] Brit. Med. Jour., July 20, 1907. Also Wells, H. G.: The Resistance of the Human Body to Cancer, The Journal A. M. A., May 29, 1909, p. 1731.

For the main part of this work the following cancerous fluids have been used (they are designated in this paper by the patient's last initial):

1. "T" fluid, obtained from Mrs. G. M. T., aged 79, whose mother died of cancer; five brothers died of tuberculosis. Patient had had many febrile diseases. Four months ago she had gastric distress, pains later, vomiting with gradual increase in size of abdomen; much loss of weight. On examination, patient showed cachexia; glands above clavicle, in axillæ and groins; abdomen slightly distended, mass 3 by 4.5 cm. in epigastrium, tender, shifting dulness in flank. Patient was tapped; 3.580 c.c. alkaline fluid obtained, sp. gr. 1,011; albumin 1.6 per cent; culture, negative; slight tinge of bile. Small lymphocytes 78 per cent.; large lymphocytes 16 per cent.; polynuclears 5 per cent. Wassermann reaction, negative. Clinical diagnosis, cancer of liver.

This fluid was the most effective in producing sloughing of tumor masses. Whether this was due to the small content of bile we are unable to state. (The later use of a non-cancerous fluid with large bile content produced practically no sloughing.)

2. "K" fluid, obtained from M. K., aged 53, who had two brothers; one sister died of tuberculosis. For three months, patient had had pain in abdomen, vomiting, loss of weight (25 pounds) and increase in size of abdomen. On examination, liver edge was not felt; abdomen was tense; fluid wave present; edema of legs up to knees. After tapping, nodular masses size of hen's egg and larger were felt all over the abdomen; large mass in left pelvis. By tapping 4,000 c.c. clear dark-yellow fluid were obtained; culture, negative; Wassermann, negative. Clinical diagnosis, general abdominal cancer, active.

This fluid has been practically inert.

3. "L" fluid, obtained from Mrs. K. L., aged 28, who was operated on five years ago for malignant disease of right ovary. May, 1910, patient was in fair flesh and general good condition, but had to be tapped every four weeks. There was a hard, lobulated, slightly tender mass size of grapefruit in right lower quadrant. Fluid was pale yellow; sp. gr. 1,010. Culture, negative. Wassermann, negative. Clinical and pathologic diagnosis, malignant papilloma of right ovary.

This fluid has been valuable in relieving symptoms and retarding the growth of several cases.

4. "P" fluid, obtained from Miss E. P., aged 31, who had an operation in June, 1901, for abscess of right ovary; 1908, repair of hernia in scar. At this time a small mass in right pelvis was felt but was undisturbed. May, 1909, the abdomen began to swell again. July, 1909, the malignant ovarian mass was partially removed; patient made a good recovery. Patient was then in excellent general physical condition; in good flesh, up and about everywhere, but had to be tapped every four to six weeks. Fluid was dark yellow, slightly viscid; sp. gr. 1,024; culture, negative; Wassermann, negative. Clinical and pathologic diagnosis, malignant papilloma of ovary.

This fluid is from the most resistant type of case and produces marked reactions. It has been especially effective in several uterine cases in checking hemorrhage, and in other cases in stopping pain and has seemed to produce more retardation than any other fluid used.

5. "H" fluid, obtained from Mrs. H. H., aged 58, who had, for several months in 1905, right-sided abdominal pain with gradual increase in size of abdomen. Operation in November, 1905, revealed a right-sided malignant ovarian mass which was partially removed. Patient made an uneventful recovery, gained weight and seemed in perfect health until about April, 1910, when she began to have symptoms of increasing constipation, but no pain, loss of weight or change in size of abdomen. Physical examination was negative. At operation, May 17, 1910, recurrent papillomatous mass was found with a little free brownish fluid. Fluid was brownish, watery, sp. gr. 1,010; slight blood content; albumin, 2 per cent; culture, negative; Wassermann, negative.

This fluid seems to have had a decided retarding effect. Not enough was obtained, however, to last more than for two months' treatment. But it was from one of the most resistant types of cases and probably had some specific effect.

TECHNIC

The peritoneal cavity was in each instance tapped under sterile precautions and the fluid drawn off into a sterile bottle and put on ice until used. No standardization was attempted and no preservative was added. The following precautions were taken before the fluids were used: 1. A culture was taken to prove them free from bacteria. 2. A negative Wassermann reaction was required from the patient from whom the fluid was drawn. 3. A series of injections was given to cancer mice to prove that the injections were in no way harmful to administer to human beings. Daily injections of 5 minims of each fluid were given subcutaneously to different series of cancer mice. These were large doses for mice. If no harm came to the mice, and none did, except in three instances, which were due either to a fault in the technic of injection, or to a contamination of the fluid with bacteria, which occurred in one case, the fluid was then used on human beings. These precautions were considered necessary before the institution of this form of treatment, for we were dealing with an entirely new experimental fluid of unknown potency and content, and every safeguard should be used before subjecting even the hopeless cancer patients to its influence.

The fluid had no apparent effect on the growth of mouse tumors.

The patients treated all had inoperable growths, either primarily so or because of recurrence or metastases. All grades of the process have been treated. No case was refused because the process was too extensive, for we wished to get our data from unselected cases; hence, the work has been largely with decidedly unfavorable cases. The patients have been treated as out-patients, reporting three times a week for injections. Fourteen of the cases have been treated as house patients, with large daily injections, for periods of one to two weeks at a time. The clinical diagnosis was unquestionably cancer in every case. In all but three this was confirmed microscopically. In all, forty-five cases have been treated.

The injections were given in four different ways:

1. Subcutaneously in the skin of the abdomen or breast, rather removed from the local disease, in large doses.
2. Subcutaneously, as near the tumor as possible, in large doses.
3. Into the substance or base of the tumor in small doses.
4. Remote from the tumor in small doses.

The dose varied from 5 minims, for the small dose, to 50 c.c. for the large dose; the usual dose, which was given regularly in most cases, without producing either local or constitutional reaction was 15 c.c.

Patients varied noticeably in susceptibility, some getting constitutional reaction with 10 c.c., while others got no reaction with 50 c.c. This variation seemed to be due more often, however, to the nature of the fluid than to the patient. Reaction at the point of inoculation varied from none at all to a temporary redness, soreness and even induration, lasting from twelve to twenty-four hours. In obese patients the reaction was usually marked. No abscesses ever developed. Local hyperemia and some swelling practically always occurred in the tumor itself immediately following the injection, and lasted a few hours, whether the injection was at a distance from, or near to, or into the tumor. It seems to me that this one fact speaks more clearly than anything else for the specificity of these fluids. The fact that a definite local reaction in the tumor itself can be produced within a few hours after injection by a substance injected at a distance from the local disease, indicates strongly the existence of some specific substance in these fluids, which acts on the tumors themselves. The exact way in which this action is brought about and the nature of the substance causing the effect, we have not been able to determine. It is hoped that further biochemical investigation may be able to throw some light on this important point. Constitutional symptoms varied from slight headache to general malaise, chills and fever, nausea and, rarely, vomiting. The temperature seldom went above 102 F. in any case, although large doses occasionally produced a higher rise. A temporary leukocytosis developed in the cases with the most marked reactions. Urinary analyses showed in no case any evidence of an acute nephritic condition being started up. Acute nephritic conditions have been reported by Beebe in New York, and a routine urinary examination should be made as a precaution in all cases under this form of treatment. The patients were started on 3 to 5 c.c. and increased at each injection up to 50 c.c., if well borne, except in those cases in which it was the intention to keep the dose small.

The following histories give the course of each case in detail.[3] Some patients reported very irregularly, while others were allowed to rest from treatment from time to time in order to observe the effect, after a certain number of doses.

Case 1.—Mr. C. S., aged 61, had a growth which appeared one year previous to examination, as a small dull-red lump the size of a marble over mid-sternum, which was cauterized repeatedly, but grew steadily larger, and ulcerated, with much pain. At examination, patient was a large-framed, nervous old man, with ruddy color. Over mid-sternum was an orange-sized, fungoid, ulcerated, protruding mass with depressed center and cauliflower edges. X-ray showed extensive involvement of sternum. Pathologic diagnosis was cancer. February 21 to March 29, 1910, Coley serum was given up to 3 minims at a dose, with no improvement or change; much pain. April 1, 1910, patient was started on "L" fluid (cancer of ovary of five years' duration) and received 25 c.c. every other day till April 11, then 50 c.c. daily up to June 1, 1910. The first five doses caused softening of the edges and increase in discharge and later a marked filling up of the ulcer in the center took place so that bone could no longer be felt at the bottom as before, and no increase in size of the tumor was noted. The patient had to take large doses of opium, however, to control the pain, which was present all the time. A large gland developed in the right axilla after about two months, and the patient very slowly became more feeble; but the original tumor seemed to have been checked in its growth and to have remained at a standstill for the three months the patient was under treatment. June 1, 1910, the patient contracted a severe "cold" and has not reported since.

In this case retardation seemed to have been effected for nearly three months by large doses of fluid from a fairly resistant type of case.

Case 3.—Mr. W. T., aged 52, had cancer of upper and lower jaw; submaxillary gland on the left was the size of a marble. Two similar masses along ramus of jaw on left and smaller nodule above one molar tooth on upper jaw. Clinical diagnosis was cancer. March 17 to 25, three doses of 2 c.c. hydrocele fluid were given, with slight increase in size of nodules. March 29 to April 23, ten doses of 25 c.c. of "L" fluid (cancer of ovary, five years' duration) were given; injections were always followed by local hyperemia in tumor, sometimes slight bleeding of gums and marked constitutional reaction with chill, headache and increase in pain. "T" fluid (cancer of liver with bile) was tried but produced such marked constitutional reaction and swelling of neck that it was stopped, and from April 25 to May 23, thirteen injections of "P" fluid (cancer of ovary, nine years' duration), were given with rapid increase in size of tumor of jaw, which on May 0 pointed and broke, discharging small bits of cancer tissue. May 23 treatment was discontinued at patient's request, as he was having much pain.

In this case neither hydrocele nor the two fluids from the most resistant cases accomplished anything at all, but rather seemed to hasten the rapidity of growth. The patient gradually grew weaker and died Sept. 1, 1910, with no change for the better.

Case 5.—M. D., a man aged 58, had an epithelioma of the leg excised in 1908. There was recurrence in the parotid within eight months. Pathologic diagnosis, cancer; rapid growth occurred after several partial removals; ulcerated. The patient was treated for four months with large doses of x-ray. Face swollen, lips protruding, drooling; large, red, deep ulcerated area replaced whole parotid region and right upper neck and cheek. Abundant discharge. April 9, 1900, 15 c.c. "L" fluid (cancer ovary, five years' duration), followed by marked local reaction in tumor evidenced by acute swelling, increase in discharge and excessive pain. April 21, patient entered ward and kept under the influence of morphin while nine injections of 50 c.c. each of "L" fluid were given, resulting in a marked increase in the discharge of serum and tissue from the ulcer, but no improvement in the condition. In this patient pain was so excessive that treatment could not be continued. It is suspected that the previous use of such large doses of x-ray was an influencing factor. The patient declined rapidly and died six days after the last treatment. This was an extensive, rapidly-growing case and the patient received absolutely no benefit from the serum except the increased discharge.

Case 6.—Mrs. N. G., aged 56, two years ago had a lump in the right axilla opened and removed; the wound never healed. Examination showed an indurated, puckered scar in right axilla, with red edges and sinus. Piece removed proved to be cancer. The breast showed no lumps or indurated areas. There were two hard glands the size of English walnuts above right clavicle at edge of sternomastoid. From April 12 to May 11, thirteen injections of "K" fluid (carcinomatosis of abdomen) were given, with cessation of slight discharge from sinus, and occasional very painful heavy condition of the breast following the injections. March 14, 1 c.c. "T" (cancer of liver with bile) fluid was injected directly into most indurated part of tumor, with resulting renewal of discharge from sinus and slight increase in size of tumor mass. This was a slow-growing condition and practically no change was noticed except those relating to the discharge. The glands in the neck, however, seemed to have grown considerably smaller. Patient was still under treatment at time of this report. There was practically no change from April to August 1, when patient stopped coming for a month. She was seen Sept. 20, 1910, when the mass in the axilla had increased 1 cm. in size; the corresponding arm was much swollen and the patient had lost considerable weight. In this case retardation lasted nearly four months. Jan. 1, 1911, patient was much emaciated and had involvement of lungs.

Case 9.—Mr. C. H. A., aged 70, had an infiltrated, ulcerated epithelioma of right jaw removed October, 1909. November, 1909, dissection of neck was done, with removal of internal jugular vein for rapid recurrence. Examination April 16, 1910, showed portion of lower right jaw missing. There was a small pea-sized ulceration at mid-scar, slightly nodular along scar; a more prominent nodule just under the ear. Pathologic diagnosis was cancer. General condition was excellent. April 16 to May 28, sixteen doses of 5 minims each "T" fluid were injected directly into various nodules in scar, with marked alleviation of pain and slight softening of nodules, and until May 28 the patient showed marked improvement; the recurrence, which had been very rapid before, seemed to be completely held in abeyance, but on May 28 it was found that since May 23 a hard mass had developed under the molar in the right upper jaw. This case was evidently retarded for over a month by the use of "T" fluid (cancer of liver with bile), but suddenly, as in Case 8, flared up after a considerable period of quiescence. Patient stopped treatment June 3, and died July 7, 1910.

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[3] On account of the length and number of the case reports not all of them have been included in the paper as printed in The Journal, but all will be found in the author's reprints. Those selected here illustrate the various phases of the subject.

Case 11.—M. F. W., aged 34, had a growth which appeared November, 1909, as a lump the size of a small marble under skin on right side of neck. January, 1910, the lump became ulcerated. No treatment was given. Examination showed orange-sized, hard, slightly red, tender mass under right parotid, with three ulcerated areas exuding pus. Ulcers were not continuous. Breath was foul. Patient was unable to open mouth, which was sore inside. Pathologic diagnosis was cancer. From April 21 to May 31, eighteen injections were given, averaging 25 c.c. each, of "T" fluid (cancer of liver with bile). The first injection of 3 c.c. caused extensive sloughing and moderate hemorrhage. The next three injections were followed by increase in pain also. After six injections the growth was breaking down fast and after ten, large pieces of tumor tissue dropped away. This extensive sloughing plus a mild injection throughout the mass caused much pain, sore throat and a very disgusting condition. Daily dressings were done by a district nurse, but even they did not control the profuse, bloody, very foul discharge. Patient was getting very feeble. The tumor had increased about double in size up to one week prior to report, since when it remained stationary. In this case the fluid undoubtedly caused a more marked and rapid breaking down of the tumor-cells. A fluid with small content of bile was used. The patient discontinued treatment June 7 and died June 14, 1910, without any relief.

This is the case in which the most marked sloughing was produced.

Case 13.—Miss E. P., aged 31, was the patient from whom fluid "P" was taken. Operation was performed in 1901; drainage of abscess (?) of ovary, probably malignant. In 1908 a second operation was done: repair of hernia in scar. Small mass in the right lower quadrant of abdomen was not removed. A third operation was performed in 1909: partial removal of malignant right ovarian mass. Pathologic diagnosis was papillary adenoma. April 22, 1910, patient was in excellent general condition; had had no loss of weight; in fact, had had some gain lately. Color was good. Patient was about everywhere; she suffered no inconvenience except that she had to be tapped every four to six weeks. There were bilateral, grapefruit-sized masses in each lower quadrant. April 25 to May 9, ten injections of 50 c.c. each of her own fluid were given subcutaneously, with no reaction of any kind. These were daily injections. After leaving the hospital patient had biweekly injections of her own fluid, and remained in excellent condition; tappings were more frequent and the mass in the pelvis seemed more pedunculated and smaller. Further operation for removal was advised. Patient was operated on in October, 1910, and mass practically completely removed. Patient had had no return of tumor or fluid by Jan. 1, 1911, and seemed in perfect health.

This was an interesting case, in which the patient was apparently benefited by reinjections of her own fluid. This case seems to illustrate the benefit of giving of autogenous serum.

Case 14.—Mr. F. C., aged 60, for two months had had a swelling of the gum of the right lower jaw. Teeth were removed without relief. Examination showed swollen, indurated, nodular, slightly ulcerated gum of right lower jaw from angle to median line, pushing the lip forward, with marble-sized glands under jaw. Patient's general condition was good. May 13, 1910, 15 c.c. "P" fluid (cancer of ovary, nine years' duration) were given, followed by no symptoms. May 18, a loose piece of the cancer tumor was excised and transplanted under skin of left breast. Pathologic diagnosis was epithelioma. May 31, no "take" had been effected and patient was again started on the fluid. Tumor was increasing rapidly.

This transplantation experiment was tried in the hope that if the transplant could be made to grow it might retard, as Gay has found in mice, the original tumor. Patient reported irregularly up to August 1, but was gradually losing strength and the growth increasing in size.

Case 15.—Mrs. I. M. Q., aged 34, had a growth which appeared in the left breast, just outside the nipple, three and one-half years previous to admission, as a lump the size of an egg. Nine months later patient had her last child, but there was no milk in left breast. The tumor broke through skin one year previous to admission but never discharged. No treatment was given. Examination showed a tumor the size of a fist, hard and nodular, with dry ulcerated area the size of a quarter in the left lower quadrant of the left breast. There were many large glands in axilla and above both clavicles; a small septic area at the top of the mass about to break, which did break after first injection. Patient had doses of 20 c.c. "L" fluid (cancer of ovary, five years' duration) with marked reaction at site of injection in the form of a hard, tender lump and heavy breast, with much pain after many of the injections. Patient's general physical condition was excellent at the start. May 10, 1910, the breast had become much softer under treatment and the ulcerated areas discharged more profusely. Since August 1 patient had had but one injection and the breast meanwhile became much harder again and the ulcerated areas dried up. The fluid evidently had a specific action in this case, as shown by the marked softening while under treatment. It was a slow-growing case and little change was noticed other than the softening during the four months of treatment. Jan. 1, 1911, patient was still alive but had metastasis in right tonsil and was beginning to fail and to show evidences of metastasis in the brain. Patient died Jan. 13, 1911, with typical symptoms of brain tumor.

Case 17.—Mrs. M. N., aged 42, six years prior to admission had a lump appear in the left breast, which was "drawn" by a quack. Three years later it returned. Quack treatment was continued. Six months prior to admission another lump appeared in the right breast. Examination showed almost complete solidification of both axillæ, and both sets of pectorals with cancer nodules; both breasts were ulcerated and dry; the left the size of one's palm, the right the size of a half dollar. Patient was in excellent general health; color very good. May 14, 1910, to May 31, patient received five injections "P" fluid (cancer of ovary, nine years' duration) with decided relief from pain; slight constitutional reaction with first two doses. There was no increase in discharge. The fluid acted as a tonic. The ulcers cleaned up materially. The patient's health was still good after four months' treatment. This was a slow-growing process, but seemed to have been benefited. Patient reported Jan. 1, 1911, that she was well except for "rheumatism," and that there then had been no change in her breast at all.

Case 19.—Mrs. L. J., aged 48, a widow many years, had had two children and two miscarriages; there had been much laceration. Three months prior to admission leukorrhea appeared, which became foul, and one month later pain in back and vagina developed. Examination showed foul discharge; vaginal vault extensively indurated; cervix nodular, hard, fissured. Patient's general condition and color were excellent. May 5, 1910, cautery and curettage of cancer of cervix was done. Pathologic diagnosis was cancer. Treatment was started May 23, 1910. Patient was very obese and had several severe local reactions at site of injection, but immediately after treatment was instituted the flowing and pain ceased and the discharge at first became increased and later decreased. Sept. 27, 1910, patient was still in excellent condition, had no pain, but considerable discharge from a process which was slowly enlarging and extending to rectum. In October, 1910, patient had suppression of urine from blocking of both ureters. She entered hospital, had ureters catheterized, but was discharged against advice, to be taken home by sister to die at home. She has been lost track of.

The most noticeable effect of treatment in this case was the cessation of pain and hemorrhage.

Case 27.—Mrs. E. W., aged 49, widow, had a "lump" in the front of her neck for ten years. Operation was performed in 1908 for carcinoma of thyroid. Pathologic report was cancer. There was almost immediate recurrence. On examination was found to be short and stout; general condition good; no cachexia. There was a hard, purplish, indurated, nodular mass involving whole thyroid region, slightly more prominent on left, reaching to below sternal notch and up to right parotid and right tonsil: with many small glands surrounding: a very extensive process. There was a slight numbness of right arm; no pain. July 5 to Sept. 30, 1910, patient received "P" fluid. After the third injection the tumor mass became much softer, and after two more injections the purplish color disappeared and the skin took on an almost healthy color. It was impossible to give this patient over 10 c.c. doses, as she got violent constitutional reactions from larger ones. She left off treatment for one month and during that time the old tense purplish color came back and the stony hardness of the mass. Considering the rapidity of growth before treatment it seems certain that the fluid had caused some retardation in this case.

CASE 31.—Mrs. C. B., aged 56, widow, had always been well until January, 1910, when she had pain when she sat down. The coccyx was removed and hypernephroma, extending to sacro-iliac joint on left, found and confirmed by pathologic examination. Five weeks prior to admission a lump appeared in the buttock. There was no pain, but discomfort on sitting. Examination showed a large-framed, obese, red-nosed woman, with poor superficial circulation, acne rosacea of face, and red scar 1½ inches long at base of sacrum; no nodules in scar. There was a hard, firm, slightly lobulated mass in right buttock, apparently springing from deep structures; no tenderness; rather tense. Pelvic examination was negative. A mass 4 by 6 inches was indefinitely determined. July 5, 1910, to Sept. 30, 1910, 15 c.c. average doses of "P" fluid were given with very slow growth of tumor to 8 by 8 inches, but considerable softening in tumor. This patient had marked local reactions after injections and numerous constitutional reactions, so that fluid could not be pushed to a high dosage. The only noticeable effect was the very slight softening in the mass following injections. The process later was growing more rapidly. From Oct. 1, 1910, to Jan. 1, 1911, the tumor grew only very slowly. At the time of this report it measured 9 by 9 inches, but was slightly harder. The patient was able to take 50 c.c. at a dose of the fluid and had no pain. The patient's condition was excellent.

This case proved to be very interesting, and a condition which gave no promise for relief has been greatly retarded.

CASE 36.—Mr. J. N. W., aged 56, had a growth which appeared twenty years ago as a small, hard pimple back of left ear and broke out and healed up off and on for five years; fifteen years ago patient had it "drawn" by a "quack." Operation was performed August, 1909. The epithelioma was excised and a plastic operation done on the ear. The growth recurred in September, 1909. The patient had *x*-ray irregularly afterward; had Coley serum for five months with gradual slow increase in ulceration under unsettled diagnosis. Pathologic report finally settled the lesion as epithelioma. Examination showed a spare, "wiry" man in excellent health and good color; lobule of left ear absent; crescentic ulceration around base of ear and partially healed ulceration nearly surrounding whole ear; slight ptosis of left lower eyelid. July 16 to September 30, patient received doses of 10 c.c. each of "P" fluid, with increased discharge from ulcerated surfaces at first, followed by slow cleaning up of ulceration, which then looked much cleaner and more healthy than before. General health was still excellent. In October all of the ulcers above the ear were hard and covered with skin. In November ulceration started in below the lobe of the ear and has been growing slowly ever since, and the last four or five injections had seemed to hurry up the destructive process so that on Dec. 31, 1910, the patient was advised to omit treatment for a month. Facial paralysis became complete on left side. Jan. 20, 1911, process had not spread further and there were islands of scar tissue present in several places. February 1, more scar tissue. Considerable reparative process going on.

CASE 37.—Mr. A. S., aged 58, had syphilis in 1879; was treated off and on for ten years with no resulting symptoms. One year prior to admission a small crust formed on the left side of the neck back of and below the ear; there was no ulceration until six months prior to admission, since which time it ulcerated and gradually spread and grew deeper. There was some pain. On examination the patient appeared well developed and nourished; a slightly pale man, and husky voice. There were old brownish scars over the legs and back. On the left side of the neck, back of and below ear, was an ulcer ½ to 1 inch deep, with ragged edges, but fairly clean, 2½ by 3½ inches across; edges not much undermined. The sternomastoid muscle and several small vessels and nerves were exposed in the bottom of the wound. There were small whitish epitheliomatous-looking patches in bottom of ulcer. Pathologic report was epithelioma, without doubt. July 16 to September 30, the patient received *x*-ray and "P" fluid in small doses twice a week with no change for the better, but with gradual deepening of the ulcer under the ear. The ulcer was clean, no hemorrhage. Complete facial paralysis on left side slowly developed and patient began to look a little paler, and was getting weaker. This patient had normal blood-serum for one month before the "P" fluid was started. No effects were noticed constitutionally or locally from biweekly injections of 1 c.c. blood-serum and certainly the "P" fluid, in small doses, has had no effect. During November and December, 1910, large doses, up to 50 c.c. were tried, but the process went swiftly on, causing an almost complete anatomic dissection of the neck down to the vertebral column. The patient's condition, however, did not suffer much and it seems as if the large doses of fluid had stimulated and nourished him considerably.

CASE 39.—Mrs. A. C. C., aged 41, had had no children or miscarriages. For five months prior to admission there was a gradually increasing vaginal discharge, not especially foul. The catamenia were not much affected. Three weeks prior to admission patient began to be very constipated and abdomen became bloated with gas. She vomited repeatedly, and had very little relief from enemas. She noticed that the uterus was lower down than normally. The patient was a small, dark-skinned, very thin, sallow woman, with pulse poor, abdomen distended, visible peristalsis, no masses. On vaginal examination the cervix was found low, hard, and with an ulcer with ragged, raised edges; the uterus was increased in size and almost completely obstructed the rectum. The patient was relieved from this attack of obstruction by one week in hospital; she went out in very poor condition. July 29, 1910, to September 30, biweekly doses of "P" fluid were given with several severe reactions, but rapid improvement in general condition, lessening in discharge and pains and gain in weight. This patient was started on four doses of 5 c.c. each of spermatocele fluid, which produced a marked stimulating effect. The cancer was slowly growing and ulcerating more rapidly, but the general condition had improved from almost *in extremis* to be very good indeed. From September to October 30, the condition remained about the same but the tumor continued to grow until the mass almost completely filled the pelvis, shutting off the rectum and nearly shutting off the bladder. Patient's strength continued good and she had little pain. The serum has been of very doubtful benefit in this case, although it seems as if the stimulating effect of large doses may have kept up her general physical condition.

CASE 40.—Mr. C. H. M., aged 59, several members of whose family died of tuberculosis, had fever and ague at 18. For thirty years patient had a tumor and a sore on the right side of neck posteriorly, which ulcerated fifteen years ago, was excised once, and "drawn" six or seven times. His voice was hoarse since October, 1909. Examination showed a tall, spare, husky-voiced man, with good color; head slightly bent to left; sternomastoid on right tense. Over an area the size of a silver dollar was a hard indurated-edged ulcer with fairly clean base and granulations. Several surrounding nodules and the tissues around for 1 or 2 inches were hard and contracted, most of which seemed to be scar tissue, but some of which was typically cancerous. Examination of the larynx showed right vocal cord in cadaveric position, and paralysis of right recurrent laryngeal nerve, from presence of the disease, probably. July 27, 1910, to August 3, as house patient, he received large daily doses of "P" fluid, with severe constitutional reaction after the last two doses, but practically no change in the local condition, except, perhaps, a little softening of the edges, but with continued relief from the pain in the brachial plexus which had been complained of. August 3 to September 30, 25 c.c. of fluid were given once a week with little change, except that the ulcer seemed cleaner. This had been a very slow-growing process, and aside from the permanent relief from pain showed no change after two months' treatment. On Jan. 1, 1911, patient was admitted to the hospital and the ulcer curetted and skin grafted, with relief of pain.

Case 43.—Mr. R. W., aged 66, had always been well until two or three years prior to admission, when a lump appeared on the side of the neck and grew slowly. It was excised several times; excision with a plastic operation was done June 1, 1910. Since then patient had a recurrence of what examination showed to be epithelioma, and much pain, which required a grain of morphin a day to control. June 23 to July 30, 5 c.c. doses of "P" fluid were given every day, with complete relief from pain, but with increase in discharge and spreading of process. Letter from wife September 30 stated that patient had not had the serum for nearly six weeks; he had gradually failed in strength of body and mind and was expected to live only a few weeks. The process had spread all over the jaw, several sinuses led into the mouth and the patient was in a pitiful condition. The only benefit in this case, therefore, was complete relief from pain while under the serum treatment.

Case 44.—Miss F. H. S., aged 50, had an operation June, 1909, for carcinoma of left breast, three months after appearance of a lump near the nipple. There was recurrence in the scar after nine months. Examination showed a strong, large-framed woman in excellent health. There was a ¾-inch linear, red recurrence in mid-scar; no pain; marble-sized nodule, with several pea-sized nodules in skin of chest wall under axilla. The arm had been swollen nearly twice its normal size since the operation. Aug. 18, 1910, to Sept. 30, 1910, the patient received 5 c.c. doses of "P" fluid twice a week, with no increase in size of nodules during this time and a noticeable decrease in the purplish-red color of skin over nodules. The swelling of the arm was controlled by massage. This case was taken early and ought to have been a favorable one for retardation. Up to Nov. 15, 1910, the disease seemed to be held completely at a standstill, but afterward there was more pain and a very slight increase in the size of the nodules. The general health, however, remained excellent.

Case 45.—Mr. H. T., aged 65, Dec. 29, 1909, had an eyebrow excised with a plastic operation for epithelioma. There was recurrence in right side of neck in May, 1910. At time of admission patient had small, hard glands under right jaw and a mass the size of a pigeon's egg under the symphysis of the jaw. The breath was foul. There was no involvement of mouth. September 20 and 27, "L" fluid was administered, with some softening in mass. Fluids were continued to Oct. 25, 1910, when patient evidently had an infection of the diseased area, with swelling, pain and redness. This subsided under poultices, and patient was admitted to hospital in November and the greater part of the mass removed. He made a good recovery. Patient remained in this condition for one month, with no increase in size of remaining nodule. Jan. 15, 1911, there was a second flare-up of the process and rapid increase in size of mass, with breaking down in several places.

This was another jaw case in which the process seemed to have been checked for a time, but which later developed with lightning-like rapidity. This series makes one doubt the beneficial influence of the ascitic fluids in jaw cases. They even seem to be harmful in some cases.

Definite results witnessed in this series of cases are as follows:

In five cases there was a decrease in, or absolute abolition of, the pain previously complained of. These were cases in which maximum doses were given (Cases 19, 22, 33, 40, 43).

In three cases there was a decided increase in the discharge from an ulcerated surface and a breaking down of cancerous tissue, considerable portions of which sloughed away entirely—enough to cause moderate hemorrhage. In no case was a fatal or even dangerous hemorrhage produced. Moderate increase in the discharge from an ulcerated or broken-down surface has been noticed in practically every patient treated. This in some cases was only temporary, but was followed later by noticeable cleaning up in the ulcer and more healthy granulations.

Cessation of bleeding in several cases of uterine cancer was seen, especially in Cases 16 and 19.

Increase in pain was experienced in Cases 12 and 5, the latter patient, who had been having very large doses of x-ray previous to injection, had excessive pain even with very small doses of the fluid. In Case 37, however, the patient also had large doses of x-ray with his treatment, but had no increase in pain.

There was apparent retardation of the growth in eight cases for periods of two to five months, and in three others for a period of over one month. These tumors were growing very rapidly when started on the serum, and, when compared with other cases in this series, as well as in the control series, it seems justifiable to state that they have actually been retarded. These are Cases 14, 8, 9, 12, 4, 6, 13, 22, 26, 27, 31.

Physical as well as psychic effects of this treatment are often marked. Twelve patients have remained in excellent general physical condition, gaining strength and weight in spite of a slowly growing process, and this has been seemingly due to the stimulating effect of the fluid. This fact may be of some importance in relation to Leary's treatment of marasmic infants with ascitic fluid.[4]

On the other hand, in no case was there actual shrinking in the size of the tumor, and from the rapid increase in the size in two cases (3 and 12), there seems to have been a decided increase in the rate of growth of the tumor; due apparently to the use of the fluid.

There was no constant effect on so-called metastatic rheumatic pains.

In no instance was any marked harm done. One dose of a fluid, which "went septic," previous to being administered to several patients, caused marked constitutional symptoms which, however, passed off in twenty-four to forty-eight hours and left no ill effects so far as could be observed, the reaction being similar to that experienced with Coley serum.

The number of fluids available from resistant cases has not been large so that it cannot be positively stated that they always have a more specific action on the cancer than the fluids from less resistant cases, but it has been noted that local and constitutional reaction has occurred more often from the use of the fluids from resistant cases, and from this we are led to believe that their action is more specific, and hence beneficial.

CONCLUSIONS

A trial of seven months' duration has now been made with a series of forty-five cases, comprising variety enough both in the fluids used and in the type of cancer treated to warrant the following statements in conclusion, based on a careful analysis of the results in this series.

1. The various transudates and exudates of the body, cancerous and non-cancerous, have no effect in retarding the growth of cancer in mice.
2. The use of cancerous ascitic fluid from patients in the active or even moderately resistant stages of the disease has no permanent effect in preventing or checking the growths of cancer, or permanently benefiting the cancer patient.
3. The other non-cancerous body fluids are even more inert.

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[4] Boston Med. and Surg. Jour., Aug. 18, 1910, p. 283.

4. Temporary beneficial effects may be noticed for periods of one to five months, but the course of the disease is in no way permanently retarded.

5. Temporary relief from pain, especially in uterine cases, and in other cases in which large doses can be given, and retardation of the growth for periods varying from one to five months, may be expected in a small per cent. of the cases.

6. Noticeable benefit in the general physical condition has resulted in one patient with cancer of the ovary by the injection of her own fluid.

APPENDIX

Since the completion of this report on the first forty-five cases, Oct. 1, 1910, twenty additional patients have been treated, with practically the same results as in the reported cases, which have confirmed our stated conclusions.

The information obtained from these twenty additional cases, and the more complete following up of the forty-five original cases, emphasized the following points:

1. Great symptomatic relief can be obtained in a good percentage of the patients treated, evidenced by relief from pain and improvement in nutrition and general physical condition.
2. Retardation is noticeable and prolonged from one to six months in many cases.
3. Ascitic fluids are liable to hasten the process in practically all mouth and jaw cases.
4. This work, together with the use of the *x*-ray in other cases, and curetting and skin-grafting sluggish epitheliomatous ulcers, has impressed me with the fact that much can be done for the relief of the seemingly hopeless inoperable cancer patient. While cures and benefit cannot be expected in every case, in spite of the fact that no cures have been accomplished, the work has emphasized the fact that much symptomatic relief can be given to suitable individual cases.

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CHEMICAL DERMATITIS FROM INCOMPATIBLE EXTERNAL APPLICATIONS

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It is a well-known fact that dermatitis is frequently caused by internal medication. With somewhat less frequency do we see a case of dermatitis caused by a combination of internal medication with a wrongly chosen external application—as for example, iodids internally and calomel dusting powders externally. Still more rarely do we see a case of dermatitis caused by chemically incompatible drugs used externally; and it is for this reason that I consider the following case of sufficient interest to be reported:

History.—A patient, male, came to me suffering from a typical case of impetigo contagiosa. There were eight or ten lesions irregularly distributed over an area about 8 cm. in diameter in the left anterior cervical region. Ammoniated mercury ointment was ordered.

Dermatitis.—The patient returned the following day to say that shortly after the first application of the ointment the area began to burn and sting severely. For several hours he underwent a great deal of discomfort. On examination it was found that a very large area, probably from 15 to 20 cm. in diameter, was highly inflamed. It was of a diffuse bright red color, with several small blisters and larger blebs which contained a thin seropurulent exudate. Some of the larger blebs were from 1 to 2 cm. in diameter. Careful inquiry proved that no mistake had been made in the ointment used. Inquiry was then made as to whether the patient was taking iodids. This inquiry was answered negatively, but brought out the fact that the so-called colorless tincture of iodin had been used externally.

This tincture of iodin had been prepared by adding to ordinary tincture of iodin enough sodium thiosulphate to displace the color. It should be remembered that such a pharmaceutical preparation would result in a mixture of sodium iodid and sodium tetrathionate, and that since it would no longer contain free iodin it should not be called "tincture of iodin" ($2Na_2S_2O_3.5H_2O+I_2=2NaI+Na_2S_4O_6\ 10H_2O$).

I attributed the condition to biniodid dermatitis. As a means of corroboration some of the "tincture of iodin" and the ointment were rubbed up together and the white ointment was at once converted into a pink or brick-red. Extraction of the oil by ether left a brick-red granular precipitate.

The reaction in and on the skin between the sodium iodid (NaI) of the mixture and the ammoniated mercury ($HgNH_2Cl$) of the ointment had evidently resulted in the production of biniodid of mercury (HgI_2), which, through its irritating influence, had produced a dermatitis.

A PECULIAR CAUSE OF INTESTINAL OBSTRUCTION

ISRAEL BROWN, M.D.
NORFOLK, VA.

Patient.—E. Z., a white man, aged 29, family history negative, was seen first by family physician September 8, suffering with pain in the abdomen, was given purgatives without any relief. Next day purgatives and enemas were given without any relief. In the afternoon, when I saw the patient, he had pain of an intense griping character and vomiting; he retained nothing by stomach; had no fever. The diagnosis was intestinal obstruction.

Operation.—When the abdomen was opened in the median line, free fluid was found in the abdominal cavity. In the ileum, about two feet from the ileocecal valve, two hard lumps, 2 inches apart, were found obstructing the lumen of the intestine. The intestines were incised, the foreign bodies removed, the intestine sutured, and the abdominal wound closed.

The patient made an uneventful recovery.

The foreign bodies consisted of unmasticated dried apples. The patient had been eating, the morning of his illness, apples dried in portions of halves and quarters, swallowing them without much mastication. The portions after entering the intestines continued to swell, as dried apples do, and obstructed the lumen of the intestine.

Therapeutics

GENERAL PROPHYLAXIS OF TYPHOID FEVER

In many particulars, no disease surpasses typhoid fever in its importance. It attacks, as a rule, healthy adults, causing a sickness that may last for weeks and even months, and may frequently end in death. It is one of the most preventable of all infectious diseases; it is, therefore, almost inexcusable that it is so widely prevalent.

It is now generally recognized that the essential agent in the causation of typhoid fever is the *Bacillus typhosus*. Since its discovery in the early '80s, and subsequent careful investigation by a number of students, our knowledge of the method of its transmission has been greatly increased. The bacillus has been found in the blood, in the feces, in the urine, and in the bile. It cannot always be discovered in the early days of the disease, but in the second or third week it can generally be detected. It may persist for years, even as many as twenty-five or fifty, after the patient has become convalescent. It may also exist in the body, and particularly in the feces and urine of individuals who have never themselves, so far as can be determined, suffered from an attack of the disease, but who have taken the infection into their bodies in some perhaps unexplained way. These individuals in whom the bacillus exists are known as "typhoid carriers," and those in whom the bacillus exists, but who have never suffered from an attack of the disease, are known as "contact carriers."

The problem in the prevention of typhoid fever is the destruction of the bacilli which are excreted by the patients suffering from the disease, or by the typhoid carriers. It might seem that this would be a simple task, and it has been claimed that typhoid fever might be stamped out in any country within a year, but such a very desirable and Utopian result seems very unlikely of accomplishment in our generation.

To consider first the measures which should be adopted in the case of the patient who is ill with typhoid fever: It is the duty of the physician to lay down such rules for the guidance of the patient and his treatment as will effectually prevent the dissemination of any of the morbific bacilli. The physician's first and most important duty is to make an early diagnosis of the disease. It has been too much the practice in past years for the physician to neglect this important part of his work. Patients have been treated for malaria, for simple continued fever, for bilious fever, and many other real or imaginary conditions who actually were suffering from typhoid fever. There is no excuse to-day, and there has not been much excuse within the last twenty or thirty years, for any physician to overlook the possibility of his patient having typhoid fever on the first day of his attendance. This does not mean that he must actually make a positive diagnosis of the disease at his first visit, but it does mean that he must be on the alert to consider the possibility that his patient may have typhoid fever; and if he does this he will save himself and the community a great deal of trouble.

While possibly the infection may be communicated by a person in the first few days of the disease, this is not nearly so probable as during the second and third weeks, when the danger is the greatest.

The bacilli are found most frequently and most abundantly in the feces. It has long been recognized that in them the chief danger of the transmission of the disease lies, and it has long been recognized that their effective disinfection is most important and most necessary. This the physician should insist on. There are various methods of doing this. The feces immediately on being passed should be covered with a 5 per cent. solution of phenol, and the hard masses should be broken up so that the disinfectant will thoroughly penetrate the fecal matter and come in contact with all microorganisms which may exist therein. Other disinfectants may be used, such as the chlorid of lime, corrosive sublimate, cresol, and the sulphate of iron. The utmost cleanliness should be used by the attendants in connection with the movements of the bowels. The skin surrounding the anus should be carefully washed with a disinfectant solution, and the cloths used for this purpose should be put in paper bags and subsequently burned. The attendant also should, after bathing the patient, always wash her hands in a disinfectant solution. In a similar manner the urine should be discharged into a vessel and mixed with a disinfectant solution.

The bacilli can sometimes be found in the sputum, and if the patient has any cough, the sputum should be collected on cloths and burned. Even if the patient has a dry cough, expectorating the so-called droplets from the mouth, pains should be taken to collect this on pieces of cloth which should be burned.

All bedding should be soaked in a disinfectant solution and boiled before being washed. The cups, glasses, dishes, knives, forks, spoons, and napkins used by the patient should also be disinfected before being washed.

During convalescence, the feces and the urine should be subjected at intervals to bacteriologic examination, to determine whether the bacilli are still present. It has been found that they may be absent at one time, and may reappear later, so that repeated examinations are necessary. The patient should be carefully isolated until repeated examinations have shown entire absence of bacilli, both from the feces and the urine. When these rules have been observed in the care of any patient suffering from typhoid, he, his friends, and the physician, will rest assured that there will be very little likelihood of his communicating the disease to anyone else directly or indirectly.

As has been stated, the disease may be carried directly from the patient suffering from the disease, or from a so-called bacillus-carrier. The bacilli may be received directly by a person who does not possess immunity to the disease by handling articles, such as clothing or utensils used in eating, which have been contaminated by fecal matter, urine, or sputum from a typhoid patient. A far more common mode of infection is indirect method, which embraces infection through water and through various food supplies, especially milk and oysters. Many epidemics have been due to the infection of a water-supply from patients suffering with typhoid. This may occur to a limited water-supply, such as that furnished from a well or spring to a single family or to a few families, or to the water-supply of a large city. It was recognized many decades ago that a well, spring, or water-supply might be infected by improper disposition of the fecal discharges of a patient suffering from typhoid. Before disinfection was generally recommended and occasionally done, it was a common practice to throw the discharges from the bowels onto the ground in any convenient place, or into a so-called privy. If this happened to be in winter, when the ice and snow melted, or in any season of the year, when the rain fell the bacilli contained in the discharges were washed away through the ground, and if a spring or well or brook happened to be in the way of this current of flowing water, it was sure to be contaminated with the bacilli, and the people who drank of the water were very likely to become infected with the disease. With the more general spread of the knowledge of the nature of the disease and the manner of its introduction into the system, this method of transmission is becoming less frequent and less important.

Another important agent, and perhaps at the present time the most important of all, is the milk supply. It has been determined that typhoid bacilli multiply in milk, and this is true of very few other media. The milk may be contaminated in various ways, either directly from patients suffering from the disease, or from a bacillus-carrier. The infection may occur from handling the milk with infected hands, or from the use of infected water in washing the cans and bottles in which the milk is carried. This is to-day perhaps the most common, and yet the most elusive method of transmission.

Shellfish in general are said to be common media for the transmission of typhoid, but the oyster is the chief agent in this communication. This happens in the following manner: The oysters are taken from deep water and placed in shallow, fresh water in order that they may absorb the fresh water and, as the expression is, become fattened. This shallow water is very likely to become infected by sewage from surrounding houses, and if there happens to be a case of typhoid fever in a house, the sewage of which drains into the bed where the oysters are fattened, the oysters are likely to absorb the bacilli and carry them to anyone who eats the oysters, unless they have been thoroughly cooked.

TYPHOID BACILLUS-CARRIERS

One of the most interesting, and perhaps the most important, problem connected with the prophylaxis of typhoid fever which has attracted study and discussion during the last dozen years is that of the typhoid bacillus-carrier. It is only within comparatively recent years that it was discovered that a not inconsiderable number of cases of typhoid fever, whose origin had been inexplicable by the ordinary known methods of contagion, were due to infection from persons whose excretions contained the typhoid bacilli, although they had not recently themselves been ill with the disease.

These bacillus-carriers were found to be divided into two classes: one class embracing those who were known to have had well-marked attacks of typhoid fever; the other, those who had not suffered an attack of typhoid, so far, at least, as it was possible to learn from a study of their pathologic history. These latter individuals are believed to become infected with the bacilli by contact with some individual suffering from typhoid fever, but through the possession of some immunity they do not suffer the ordinary febrile attack of the disease, but the bacilli remain within their bodies and undergo multiplication and subsequently are excreted.

Under another form of classification these bacillus-carriers are distinguished as: (1) precocious carriers, which includes persons who have been recently infected with the disease but have not yet shown symptoms of it, although they may later do so; (2) the convalescent, temporary or transitory carriers who have passed through the disease and are convalescent from it, but whose excretions still contain the bacilli; (3) the chronic carriers, those who after an interval of three or four months have not ceased to present the bacilli in their excretions.

It is generally recognized that typhoid bacilli occur in the blood in a large majority of patients suffering from typhoid fever. In the feces, they are found most frequently about the third week of the disease. Various observers have found them in from 33 to 100 per cent. of cases in the third and fourth week of the disease. They are less commonly found in the urine, in ordinary cases, but it is generally agreed that they are found there in from 20 to 25 per cent. of typhoid patients. Some observers believe that in all cases in which the bacilli are found in the urine, there will also be found a slight trace of albumin. They may appear in the urine early in the disease, and in the majority of cases disappear in from three to thirty days, but in exceptional cases they may persist much longer. These facts render it important, from the standpoint of the sanitarian, to observe the cases of typhoid fever during convalescence much more thoroughly than has hitherto been done. When it is considered that these bacillus-carriers may continue to excrete bacilli for from one to fifty years after the original attack of the disease or the original infection, the immense importance of preventing their existence is easily recognized.

The natural corollary of these observations is that the health authorities in every city should conduct systematic observations of the urine and feces of every typhoid fever patient until repeated examinations on different days show that both these excretions are free from typhoid bacilli. It has been suggested that when the typhoid bacillus-carriers have been entirely eliminated that very much will have been done to entirely abolish typhoid fever.

When it has been determined that a certain individual is a typhoid carrier, the next problem is how to stop his elimination of typhoid bacilli. This is a problem which is both important and difficult. Where the bacilli are eliminated with the feces, it must be taken into account that the gall-bladder is a very important focus for the development of the bacilli. This is often associated with inflammation of the gall-bladder and with the development of biliary calculi. In fact, long before the existence of bacillus carriers was even suspected, it had been noted that people who had had typhoid fever were especially likely to suffer from inflammation of the gall-bladder and from biliary calculi.

The attempt has been made to destroy the bacilli in the gall-bladder and intestines by the administration of various drugs, among which may be mentioned hexamethylenamin (urotropin), salol, beta-naphthol, oil of turpentine, sodium salicylate, chloroform, calomel, and bile and its salt. All of these drugs, however, have but a temporary effect. The most useful are hexamethylenamin, sodium salicylate, and salol. Even the *x*-ray has been tried, but seems to be of little value.

When the bacilli are found in the urine, hexamethylenamin has been tried, and while it does decrease the number of bacilli eliminated during its administration, they often reappear when the use of the drug is discontinued.

When drugs fail, the vaccines, preferably the autogenous vaccines, have been used with apparent benefit in several cases. The usual dose is from 40,000,000 to 1,000,000,000, repeated several times. This treatment with vaccines is the more efficient the earlier during convalescence it is commenced.

The carrier himself usually suffers little inconvenience from the presence of the bacillus within his body. In some cases there may be gall-bladder symptoms, due to inflammation of the gall-bladder, or to the formation and presence of calculi. Occasionally headaches are complained of. Sometimes intestinal disturbances are noted, especially in the spring, summer, or late autumn. When the carrier is aware of his condition, and of the efforts which are taken to cure him of it, if of a nervous temperament, he may develop a form of neurosis. Sometimes the carrier may succumb to a general infection by his own bacilli causing auto-infection.

Neurasthenia an Insanity.—In pure neurasthenia there is no disturbance of the general relationship of the individual to his environment, no disorder of conduct, and therefore no insanity. It is unfortunate that the term "neurasthenic insanity" should have been applied to patients suffering from this condition in whom, while there is admittedly no insanity, the mental symptoms are exceedingly prominent. It is totally erroneous to speak of insanity, however we may qualify it, in regard to persons who are not insane, and a better term for these conditions of neurasthenia in which the symptoms are largely mental would be "psychasthenia gravis."—A. F. Tredgold, in the *Practitioner.*

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[*For other information see second page following reading matter*]

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IMPURE AIR AND MEDICINE

Impure air has long been considered the direct cause of many diseases which modern medicine can no longer explain on that basis. Laymen still not infrequently ascribe such diseases as typhoid and diphtheria to "sewer-gas" contamination, and the very name of malaria bears testimony to the erroneous theory with regard to it formerly held by the medical profession. But there remains a large and important class of diseases, principally of the respiratory tract, in the production of which atmospheric impurities play no small part. So, for instance, workers in the dust-producing industries are notoriously liable to tuberculosis, to say nothing of the added danger in the case of those dusts that in themselves are poisonous.

The vast expansion of our modern industrial centers, with the aggregation of large numbers of smoke- and soot-producing furnaces, has opened a new phase of the subject, and one whose exact significance is still a matter of dispute. The ultimately injurious action of the constant inhalation of smoke and carbon particles can almost be assumed as self-evident; but that it has effects of any great seriousness cannot be regarded as proved. In a long series of articles Ascher[1] has sought to demonstrate, by both statistical and experimental evidence, the directly injurious action of the "smoke plague" in causing death from acute inflammatory diseases of the respiratory tract.

On the other hand, Gebecke[2] in a recent article, disputes Ascher's findings, both experimental and statistical. Inasmuch as his statistical data are for the most part derived from the same sources as those of Ascher, the ultimate result seems merely to demonstrate anew the proverbial fallaciousness of such evidence. But, nevertheless, Gebecke's article serves to indicate that our modern smoke evil has not the pronouncedly harmful effect on the mortality rate that one might be inclined to assume. In regard to such diseases as may be considered as directly air-borne, such as those produced by the poisonous dusts, or by inhalation of "infectious droplets," the situation is of course quite different. The recent rapid spread of the pneumonic form of plague in North China demonstrates strikingly the potentialities of direct respiratory infection; and occupational dust-poisoning, although far less wide-spread, has been considered of sufficient importance to justify legislative control in some parts of Europe at least. The means taken to combat the evil are as ingenious and as varied as are the different industries in which it occurs. Moistening of material, substitution of innocuous ingredients for the poisonous ones, and removal of dust at the point of origin, are all taken advantage of when possible. But there still remain several industries in which these procedures are inapplicable, and in the worst of these, as for example the alkali, chrome, and dry lead works, the German government prescribes the use of respirators. A comparative experimental study has been made of the different types of these by Schablowski;[3] and his results are of interest as revealing the inefficiency of many such devices. Twenty-six of a total of thirty-seven masks of different manufacture permitted the passage of 30 per cent. or more of dust, some allowing as much as 89 per cent. to pass through. Of the remaining eleven, five were variations of the same model, and two were respirators constructed experimentally by Kobrak.[4] These last consisted simply of a fine-mesh batiste, fastened in cowl fashion by means of constricting bands about the forehead and shoulders, with an aluminum frame to keep the gauze some distance from the mouth and nose. Such a mask, it was found, absolutely prevented the passage of infectious droplets forcibly expelled by sneezing from a distance of 30 to 40 centimeters. With dust it was not so effective, as 18 per cent. passed through. On the substitution of filter-cloth for the batiste, this was reduced to 11 per cent., but at the expense of some degree of the comfort with which it was borne. The best of the commercial masks, similarly equipped, was just about as effective.

The data cited here seem to point out in some measure the difficulties that lie in the way of adequate legislative control of occupational diseases. As Schablowski somewhat pessimistically states, the choice of respirator in any given case would depend on the chooser; if the employer chose, the cheapest would be selected; if the male laborer, the most comfortable; and the female laborer, the most becoming—no one apparently being greatly concerned with the practical efficiency of the device.

THE CHOLERA SITUATION

Official reports indicate that cholera has appeared in Hawaii, 35 cases and 26 deaths having occurred between February 25 and April 16, 1911. This close approach to the Pacific Coast and actual infection of the island territory gives cause for concern at this time, when the disease has apparently receded from European ports.

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[1] Ascher: Deutsch. med. Wchnschr., 1909, xxxv, 585.

[2] Gebecke: Ztschr. f. Hyg. u. Infectionskrankh., 1911, lxviii, 105.

[3] Schablowski: Ztschr. f. Hyg. u. Infectionskrankh., 1911, lxviii, 169.

[4] Kobrak: Ztschr. f. Hyg. u. Infectionskrankh., 1911, lxviii, 157.

The present pandemic that has now threatened both our Atlantic and our Pacific coasts began in India in 1902, and in that year spread to China and the Philippine Islands. Since then the disease has gradually but steadily extended, both by caravan routes and by sea, until Persia, Arabia, Egypt, Syria, Palestine and Asia Minor were infected. Had the infection stopped there, American shipping would have been in no great danger, but outbreaks also subsequently occurred in Russia, a few cases were reported from Germany, and during the past fall and winter rather severe outbreaks have occurred in different parts of Italy and the Madeira Islands.

During the past year, cholera prevailed in serious form in Japan, which was an added menace to the west coast, and now that the disease has reached Hawaii, the danger to the United States is more direct and threatening than at any time since 1892.

That there has been real danger of the introduction of cholera during the past few months is shown by the fact that cases were discovered among arriving aliens at the ports of New York and Quebec. The fact that Italy was declared free from cholera Jan. 31, 1911, and Funchal on February 24, is, on the other hand, reassuring, but the knowledge of the liability of recurrence of the disease in previously infected localities must be borne in mind.

It is altogether probable that the disease will recur in some parts of Europe during the coming summer, and render necessary close quarantine supervision over transoceanic shipping. During the recent past this supervision has consisted in the sanitary inspection of ships and passengers at both foreign and domestic ports, close medical inspection of aliens, and the notification of state and local health authorities regarding the destination in the United States of all arriving aliens.

Such precautions would seem to furnish more than adequate protection; yet, owing to the fact that the infection of cholera may be carried by healthy individuals showing no signs of the disease, it would be possible for a bacillus-carrier to enter the United States without detection, and the nearer the approach of cholera to our shores, the greater is this danger. The present situation, therefore, demands that federal authorities shall be provided with all adequate facilities to prevent the introduction of the disease and its spread, should it unfortunately gain entrance; and all health officers should be especially alert and look with suspicion on any intestinal disturbance, particularly in individuals recently arrived, or associated in any way with newcomers.

Neurasthenia and Movable Kidney.—Neurasthenia is an exceedingly common symptom of movable kidney. To those well acquainted with the anatomy of the kidney and the difficulty with which the organ is displaced from its position surgically, the idea that neurasthenia can cause movable kidney appears absurd. Neurasthenia can no more cause movable kidney than it can dislocate a joint.—C. W. Suckling, in the *Practitioner.*

PRESIDENT TAFT'S MESSAGE TO PHYSICIANS

> President Taft was tendered one of the most extraordinary receptions and banquets, as well as a demonstration of popularity last night, that has marked his career as President of the United States, and in being the guest of honor of the Medical Club of Philadelphia . . . received fitting tribute for his humanitarian endeavors while secretary of war and as chief executive.

Thus is expressed the layman's view—that of the Philadelphia *Public Ledger*—of the splendid testimonial banquet and reception tendered by the physicians of Philadelphia, of Pennsylvania, and of the whole country —for the country as a whole was represented—to the President of the United States last week at Philadelphia. The officers and members of the Medical Club of Philadelphia are to be congratulated on the well-planned and dignified testimonial to the President of the United States in recognition of his services to sanitary science and as an appreciation of his aid in the advancement of public medicine.

No other president has been so honored by the medical profession; and no other president has so honored the physicians of the United States. But it must be said also that no other president has been brought into contact with physicians and their work in so many ways—has had such a practical knowledge of what medical science has done and is doing—for no other president has had the opportunities for personal observation of the results of scientific sanitation that President Taft had in the Philippines, in Cuba, in Porto Rico, in the Canal Zone and as Secretary of War. His address to the thousand physicians at the reception—and to the medical profession of the country, for he took pains to emphasize the fact that he had a message for the medical profession of the United States—was a gratifying appreciation of the economic and humanitarian benefits that have resulted from modern medicine. It was also an evidence that, for a layman, the speaker had an unusually wide knowledge of medical affairs and grasp of medical science and what it has accomplished.

As one listened, one could not help believing that, if President Taft could have his way about it, public health matters would be given greater recognition by the national government than they are now given, even to the extent of the creation of a department of public health, with a secretary in the cabinet. Of course he did not say so. He did not even hint at a department of public health, or intimate that he had ever heard of such a proposition; but others thought of it, and three speakers who followed him mentioned it aloud, and with emphasis. Not that there was any indication of a desire on the part of any one to make use of the opportunity to advance the idea of a department of public health or any other measure; on the contrary, the spirit that prompted the function and that prevailed throughout the evening was that of brotherly love and of respect for the President, who by word and deed, in the many responsible positions he has occupied, has shown a knowledge of medical science and an appreciation of its importance, from the economic as well as from the humanitarian aspect, as has no other public man. The medical profession feels more than ever assured that President Taft is in sympathy with the plans for increased federal activity for better public health.

Current Comment

LIFE-SAVING ABROAD AND LIFE-WASTING AT HOME

It is significant, and by no means gratifying to our national pride, that President Taft,[1] when desiring to demonstrate the value of modern sanitary methods, was forced to draw all his illustrations from our island and provincial possessions. Modern sanitary science has abolished yellow fever in Cuba, discovered the cause and largely controlled the ravages of hookworm anemia in Porto Rico, barred yellow fever and Chagres fever from the Canal Zone, isolated leprosy in Hawaii and the Philippines and aided in the investigation of beriberi. This work has practically revolutionized conditions in our tropical possessions and has enabled the President to say that "in the short twelve years that we have been responsible for the health of our people in the tropical climates, we have made more progress in the discovery of methods of prevention and cure of tropical diseases than all other countries have made in the past two centuries." Modern sanitary methods backed up by intelligent and authoritative administration have indeed worked wonders in the tropics; but what of our own country? Tuberculosis, typhoid, pneumonia and the appalling black plague of venereal infection still lay waste the land. They are tolerated chiefly because we are accustomed to their presence. If tuberculosis were a newly discovered tropical disease, if typhoid fever were limited to the tropics, how horrified would we be at their ravages and how warmly would we applaud any efforts of the national government to control them! But through long association, we have become tolerant of their presence and reconciled to their destructiveness. Yet modern sanitation, if permitted, can effect as marvelous changes here as in the Canal Zone or in Havana.

PUBLIC HYGIENE AND PRIVATE PRACTICE

In his response to the toast "The American Medical Association," Dr. Welch emphasized one fact thoroughly familiar to physicians but not yet appreciated by the public, which should be given the widest possible circulation. He said: "Public hygiene and preventive medicine have acquired an economic and social significance among the organized forces of civilization but little appreciated to-day by the general public or by legislators and administrative officers of government. They occupy a field quite apart from systems and schools of medical practice." The opponents of increased governmental activities for the conservation of life are apparently unable to discriminate between the practice of medicine by the individual physician and the application of demonstrated scientific facts in public hygiene. In no other way is it possible to account for the fact that efforts to increase the health functions of the federal government have been regarded as an invasion of the personal rights of the individual. He who cannot distinguish between the treatment of an individual typhoid fever patient by an individual physician, and the removal of the cause of typhoid fever through the purification of the water-supply of a community, is still in an elementary state of education. The treatment of the individual patient is not and should not be a matter of governmental concern. The correction of insanitary and unhygienic surroundings and conditions is of the highest importance to the modern state and is worthy of its utmost activities.

THE PRESIDENT VERSUS "LIFE"

In a former number[1] we quoted the profound and learned comments of *Life* regarding the use of typhoid vaccine in the army. In his address before the Philadelphia Medical Club, President Taft said on this point: "Now we have a division of 1,800 men in Texas and California. They have been there for two months living under canvas and in a country soaked with rain. . . . I need not recall the dreadful record of sickness from typhoid fever in the camps at Chickamauga. . . . Of the volunteer regiments mobilized during the Spanish-American war, 90 per cent. [about 16 per cent. of the men] became infected with typhoid fever within eight weeks after the date of mobilization. To-day, two months after mobilization with the modern health regulations and by the use of vaccine against typhoid, not one case of typhoid has appeared in the entire force, except that of one teamster who was not vaccinated." This seems to be a question of veracity between President Taft and *Life*.

HUMAN FALLIBILITY

To one who, from time to time, looks over the accident bulletin of the Interstate Commerce Commission, it is not a little discouraging to see the number of accidents that continue to occur in spite of the endeavor of railroad officials to prevent them. One safeguard sought for is to have more than one employee responsible for the carrying out of one particular order so that, if one man forgets or fails, the duty will be performed by another, or, at least, the error detected; and yet we find an engineer rushing past both torpedo and red lantern, a conductor and engineer both misreading an order, a telegraph operator making an assumption contrary to written orders in his hand—each an instance of human fallibility. Then the trains come together and lives and property are lost. The human mechanism often seems far more fallible than mechanical safety devices. One reason may be that we are not accustomed to investigate cause and effect so rigorously in the case of the human as in that of the inanimate machine. When disaster occurs from the wrong working of a steel and iron machine, people do not stop with saying "The machine was to blame"; those who pay the cost of the new one usually find out whether the old machine was made of poor material, constructed on wrong principles, worn out or inefficiently operated; and they endeavor to avoid that cause of failure for the future. When a wreck occurred through the failure of a telegrapher to transmit orders or of an engineer to read them, if we may judge by the reports of those acquainted with the circumstances, the tendency in the past too often has been to stop with "fixing the blame," without endeavoring systematically to go further and find out how such errors can be eliminated thereafter. A letter published in this issue indicates that the railroads of the country are awake to their responsibilities. This is gratifying and creditable. Our correspondent, however, seems to take the position often assumed, namely, that the road cannot justly be held responsible for accidents due to failure of employees to carry out orders. We believe that more exhaustive study of the problem will show that a public service corporation is as responsible for the quality of its employees as for that of its machinery; as responsible for their discipline as for the repair of its equipment. Since, no matter how much may be required of inanimate machines, the directing human element can never be wholly eliminated, we hope that systematic study of railroad accidents from the point of view of the circumstances which affect the working of the human mechanism will some day help to reduce the total as nearly as possible to the sum of the humanly unpreventable.

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[1] See report of the banquet of the Medical Club of Philadelphia, in General News, this issue.

[1] The Journal, March 25, 1911, page 1902.

CHILD WELFARE EXHIBITS

In the education of the public in hygienic and health matters, the child welfare exhibits that have been held in a number of cities constitute an important agency. The exhibit recently held in New York City was a pronounced success, being attended by a large number of people. An exhibit is being held in Chicago (May 11-25) and great interest is being taken to make it a success by both the municipal health department and the various public welfare agencies. Among the features of the exhibit are demonstrations of the methods of care and feeding of infants, infant hygiene, illustrations of defective methods and their results, graphic representations of the high death-rate of infants from preventable causes, the causes and manner of preventing blindness in infants, the problems of fresh air and light, play and play-grounds, the effects of work and the hours of work on children, what municipalities and the various social welfare agencies are doing for the welfare of the children, and by charts, placards, figures, pictures, exhortations, demonstrations, etc., showing what may and should be done for the advancement of the welfare of the rising and the coming generations of children to make them healthy, strong and efficient citizens. As indicated by the success of the New York exhibit, the demonstration in Chicago should have valuable educational results.

SACCHARIN AN ADULTERANT

The referee board that was appointed to review some of the decisions of the Bureau of Chemistry has recently concluded its investigation regarding the use of saccharin in foodstuffs. Those of our readers—and they are many—who received with regret the board's decision regarding the use of benzoate of soda, will be pleased to learn of its decision in the case of saccharin. The board reports that "the continued use of saccharin for a long time in quantities over three-tenths of a gram per day is liable to impair digestion; and the addition of saccharin as a substitute for cane sugar or other forms of sugar reduces the food value of the sweetened product and hence lowers its quality." On the strength of these findings, the United States Department of Agriculture has declared that after July 1, 1911, saccharin-containing foods will be regarded as adulterated within the meaning of the Food and Drugs Act. As saccharin is several hundred times sweeter than sugar and by no means an expensive product, it has been used for years as a substitute for sugar by manufacturers who are more concerned with their dividends than with the quality of their products. Enormous quantities have been used as a sweetening agent in the inferior qualities of ginger ale and it has been used to some extent by the manufacturers of canned corn, peas, etc., to lend an artificial sweetness to these products. Fortunately, this form of fraud—for it is a form of fraud—will have to cease, so far as goods for interstate commerce are concerned, after the first of July of this year.

Medical News

ILLINOIS

Hospital Corner-Stone Laid.—The corner-stone of the Deaconess Home and Hospital of the Central Illinois Conference of the Methodist Episcopal Church, Peoria, was laid, with impressive ceremonies, May 3.

State Surgical Institute for Children.—Companion bills, providing for the establishment of a state surgical institute for children under 14 years of age and appropriating $60,000 for buildings and $15,000 for furnishing, were passed by the House of Representatives, April 26, without a dissenting vote. The establishment of the institute is dependent on the donation of 160 acres of suitable ground for a site.

Optometry Bill Defeated in Senate.—The State Board of Health announces that Senate Bill No. 140 to regulate the practice of optometry in the State of Illinois was defeated in the senate, May 3, by a vote of 14 to 10. Eighteen more senators were present but did not vote. To pass a bill, twenty-six votes are required. This action is said to kill the house bill which is still in the subcommittee of the judiciary committee of the House of Representatives.

Personal.—Dr. Arthur F. Wilhelmy, Decatur, has been detailed for duty at the maneuvers, San Antonio, Tex.——Dr. and Mrs. Hugh M. Orr, LaSalle, sailed for Europe, May 3.——Dr. Charles W. Hall has been appointed physician for Kewanee Township.——Dr. James D. Harlan has been made mayor of Fairfield.——Dr. Wiliam G. Alexander has been elected president and Dr. William C. Danforth secretary of the Evanston Tuberculosis Institute.——Dr. Theodore F. Gerould, Centralia, has been appointed diphtheria coroner of Marion County.

District Society Meeting.—The District Medical Society of Central Illinois held its thirty-seventh annual meeting in Pana, April 25, and elected the following officers: President, Dr. Melvin P. Parrish, Decatur; vice-presidents, Drs. John H. Miller, Pana, and Edgar B. Kerr, Westervelt, and treasurer, Dr. John N. Nelms, Taylorville.——The annual meeting of the Rock Island Medical Society was held in Rock Island, April 11. The following officers were elected: President, Dr. Warner L. Eddy, Milan; vice-presidents, Drs. Evlan Sargent, Moline, and William D. Snively, Rock Island; secretary, Dr. Albert Nicholas Mueller, Rock Island (reelected); treasurer, Dr. Arthur Thomas Leipold, Moline (reelected); delegate to the state society, Dr. Henry S. Bennett, Moline, and alternate, Dr. Joseph R. Hollowbush, Rock Island.

Approves Endeavor to Raise Standard.—Henderson County Medical Society, at its last meeting held in Stronghurst, adopted resolutions setting forth the existence of a number of unnecessary medical colleges from which great numbers of *incompetent or illiterate* physicians are graduating; that some of the best equipped medical colleges, owing to competition, are graduating improperly qualified physicians; that state boards of examiners have not proved themselves capable of neutralizing the lenient tendencies of certain medical colleges; that many teachers in medical schools reap undue advantage from their connection with such schools in the way of honors and fees; and that the *foregoing conditions* are disastrous to the country practitioner; and resolving that the management of the American Medical Association be thanked for the services already rendered in the way of elevating medical standards, and that it be requested to employ its utmost endeavors still further to raise the standards of medical education and of medical practice in the United States.

Chicago

Hospital Enlarges Site.—Provident Hospital has acquired property north of its present location as the result of a campaign which brought in seventy-eight contributions, ranging from $1.00 to $1,000 each.

Hurt in Auto Wreck.—Drs. James A. Jennings and H. E. Corley, while riding in their automobile across a grade crossing of the Chicago Terminal Railroad, May 4, were struck by a train and painfully injured.

Much Communicable Disease.—During the week ending May 6, twenty-six cases of diphtheria were received at the Contagious Disease Hospital. Twenty-eight patients were discharged, recovered, two died, and sixty-four patients still remain under treatment. The Isolation Hospital received seven cases of small-pox, all of unvaccinated individuals, discharged five patients, recovered; one patient died, and thirty-one remain under treatment.

Staff Returns to Hospital.—Drs. Alice Conklin, Henrietta M. Farquharson, Bertha Van Hoosen, Grace Campbell, Lois L. Wynekoop, Sara J. McCollum and Louise Acres, who were discharged from the staff of Mary Thompson Hospital on charges of alleged insubordination March 1, have been reinstated, and, beginning with May 9, the institution is operated under new management. The new plan provides that the Chicago Woman's Club will be represented on the board of control by eight of the twelve members.

MARYLAND

Personal.—Drs. Timothy Griffith and J. Marshall Price have been appointed members of the Board of Health of Frostburg.

Increased Accommodation at Sanatorium.—A contract has been entered into, that will provide accommodation for two hundred advanced tuberculosis patients at the State Tuberculosis Sanatorium.

County Society Election.—Montgomery County Medical Society held its annual meeting and election at the Chestnut Lodge Sanatorium. Dr. James Dudley Morgan, Chevy Chase, was elected president; Dr. Frederick N. Henderson, Rockville, vice-president; and Dr. John L. Lewis, Bethesda, secretary and treasurer. (reelected).

Hospital Transferred to Church Authorities.—The papers formally conveying the Maryland General Hospital to the Methodist Episcopal Church were signed April 27. The conveyance was made in return for the assumption by the church of the debt of $167,000 which rests on the institution. The relations of the faculty of Baltimore Medical College to the institution remain unchanged.

No Attempts to Violate Pure Food Law Discovered.—Dr. Charles Caspari, Jr., Pure Food and Drug Commissioner, says that not a single deliberate attempt to violate or evade the state pure food law has, as yet, been discovered. In his opinion, the law has two defects which should be corrected: it grants permission to sell substandard goods, provided the formula is printed on the package, and it requires that every case be taken before the criminal court for settlement.

State Physicians' Meeting.—The one hundred and thirteenth annual meeting of the Medical and Chirurgical Faculty of Maryland was held in Baltimore, April 25-27, under the presidency of Dr. Franklin B. Smith, Frederick. The following officers were elected: President, Dr. Hugh H. Young, Baltimore; vice-presidents, Drs. J. L. Rieley, Pocomoke City, Daniel E. Stone, Mount Pleasant, and Joseph A. Chatard, Baltimore; secretary, Dr. John Ruhräh, Baltimore; treasurer, Dr. William S. Gardner, Baltimore; trustee, Dr. James W. Humrichouse, Hagerstown; councilors, Drs. Charles O'Donovan, Baltimore, Lewis C. Carrico, Bryantown, James E. Deets, Clarksburg, and Harry B. Gantt, Millersville; delegate to the American Medical Association, Dr. G. Lane Taneyhill, Baltimore; alternate, Dr. James J. Carroll; and members of the State Board of Medical Examiners, Drs. Lewis A. Griffith, Upper Marlboro, and James A. Stevens, Easton.

Baltimore

Faculty Appointments.—The following are recent appointments to the faculty of the College of Physicians and Surgeons: Dr. Charles E. Simon, professor of clinical pathology and experimental medicine, with Drs. G. Howard White and W. Milton Lewis as assistants, and Dr. Henry L. Whittle lecturer on physiologic chemistry.

Personal.—Dr. William Simon, the autochromatic photographer, is confined to his home with a slight attack of typhoid fever.——Dr. Lewellys F. Barker, who was operated on, April 10, for appendicitis and gall-stones, left the hospital, May 3.——The appointment of Dr. James M. H. Rowland to the Baltimore School Board has been confirmed by the city council.——Dr. Norman F. Hill underwent operation at Mercy Hospital recently, and is reported to be in serious condition.——Dr. Joseph C. Benzinger fell recently, breaking his arm.

Commencement at University.—At the approaching commencement of the University of Maryland, the address to the graduates will be delivered by Dr. Harvey W. Wiley of the Department of Agriculture, Washington, D. C. The honorary degree of LL.D. will be conferred on Christopher Johnston, M.D., A.M., Ph.D., professor of oriental history and archeology in Johns Hopkins University, who is a son of the late Dr. Christopher Johnston, for many years a leader in the profession of the state, and professor of surgery in the University of Maryland.

Favor Tropical Disease Congress at Baltimore.—The medical faculty of the University of Maryland has declared in favor of holding the Congress on Tropical Diseases, proposed at the recent meeting of the Medical and Chirurgical Faculty of Maryland, in Baltimore, as a recognition of the part played by the medical profession at the opening of the Panama Canal. It is pointed out that Drs. James Carroll, Walter Reed and Jesse W. Lazear received their training and inspiration in Johns Hopkins Hospital and the University of Maryland. The proposal is said to be meeting with general approval.

MASSACHUSETTS

Transfer of Nursery.—By a recent decision of the supreme court, the property of the Boston Day Nursery has been turned over to the dispensary in ratification of an arrangement entered into by mutual consent of both corporations, and actually in effect since last October. The dispensary is maintaining a hospital of sixteen beds for infants and children.

Bequests.—Under the terms of the will of the late Harriet E. Goodnow, Sterling, $5,000 is bequeathed to the Massachusetts General Hospital, $5,000 to the New England Hospital for Women and Children, and $5,000 to St. Margaret's Hospital; with the proviso that the money be used in each instance for the endowment of Waite memorial beds.

Hospital Notes.—The new St. Margaret's Hospital, Dorchester, Boston, was opened for public inspection, May 5. The building is situated on a high elevation and contains thirty-three private rooms. The hospital is an open-staff institution. ——On April 26, Dr. Caroline Hastings turned the first spadeful of earth for the foundation of the hospital, home and training school of the New England Moral Reform Society, on the old Fisher estate, Jamaica Plain.

Personal.—Dr. Henry J. Barnes, professor of hygiene in Tufts Medical School, Boston, announces that he will sever his connection with the school at the close of the present year.——Dr. Moses Greeley Parker, Lowell, was elected president-general of the Sons of the American Revolution, May 3.——Dr. and Mrs. John Bergeson, Boston, sailed for Europe, April 19. ——Dr. and Mrs. Martin T. Field, Salem, have gone abroad. ——Dr. Francis A. Bragg, Foxboro, has been reappointed medical examiner for Norfolk County.——Clement F. Coogan, Pittsfield, has been made a member of the State Board of Health vice James W. Hull, deceased.

MICHIGAN

Small-Pox in Hospital.—Small-pox which developed in the Homeopathic Hospital, Ann Arbor, April 22, was positively diagnosed as such, April 24. There were five cases and the patients have been quarantined on an upper floor of the institution.

Antituberculosis Association Formed.—At a meeting, held in Blissfield, April 18, at which Dr. Alfred S. Warthin, Ann Arbor, secretary of the State Society for the Prevention of

Tuberculosis, delivered an address, an antituberculosis society was organized and Dr. Rosingrave M. Eccles, Blissfield, was made chairman of the organization committee.

Personal.—Dr. James H. Bogan, Mackinac, while splitting wood a few days ago, cut off his left forefinger with an axe. ——Dr. Paul C. Dulitz, Detroit, has been elected president of the poor commission of Wayne County, and Dr. Otto Scherer, vice-president.——Dr. William Acker has been appointed city physician of Monroe.——Dr. Isaac W. Houston has been elected health officer of Marshall.——Dr. Clarence Young has been reelected mayor of Allegan.——The governor has sent to the senate the nomination of Prof. Robert L. Dixon to succeed Dr. Frank W. Shumway, Lansing, as secretary of the State Board of Health.——Dr. Henry A. Newkirk has resigned as health officer of Iron Mountain.——Dr. Charles N. Bottum, Birch, has been appointed physician of the Morgan Heights Sanitarium, Marquette.——Dr. James E. Mead, Detroit, major M. C., N. G. Mich., has been ordered for duty to the maneuver camp at San Antonio.

NEW JERSEY

Personal.—Dr. Richard Cole Newton, Montclair, has been appointed a member of the State Board of Health.——Dr. William H. Kensinger, Camden; Frank J. Hughes, Union, and Elmer S. Loomis, Mercer, have been appointed members of the State Tuberculosis Commission.——The residence of Dr. Robert H. P. Ellis, Paterson, was damaged to the extent of about $14,000 by fire and water, April 19.——Drs. William Franklin Faison, Louis Franklin, Oliver R. Blanchard, Edward Leonard Bull and William Phyle, all of Jersey City, will open a sanitarium on Fairmount Avenue in the Bergen section.

Health Officers' Association Organize.—At the meeting of the executive officers of the Board of Health of New Jersey, held at Newark, April 17, a permanent organization, known as the Health Officers' Association of New Jersey, was formed, with the objects of advance of knowledge relating to public health and sanitation and the encouragement of social intercourse among health board officials. C. H. Wells, Montclair, was elected president; John O'Brien, Jr., Plainfield, vice-president, and J. Scott MacNutt, Orange, secretary and treasurer. An executive committee was elected and the officers of this committee were instructed to draw up a constitution and by-laws to be presented at a meeting to be held May 17. All health officers allowed state board of health licenses are eligible for membership and, doubtless, this privilege will be extended to other health board officials and employees and members of local boards of health.

NEW YORK

Site for Tuberculosis Hospital.—An option has been given to the special supervisors' committee of Broome County on a tuberculosis hospital on the property owned by Mrs. W. B. Cleves, on the summit of Mount Prospect, near Binghamton, for $15,000. The building has been used for twelve years as a summer hotel and can, it is said, be utilized for a tuberculosis hospital with little remodeling.

Health Board Prohibits Exposure of Food.—Commissioner Lederle believes that the exposure of food to the dust and dirt of the public streets is a measure to health and has directed inspectors of the department to enforce strictly the sanitary code relating to the conditions under which food products may be sold when exposed outside of stores. The police department has been called on to assist in this work.

Hospital Notes.—Rockaway Beach has just opened its first hospital. It is a brick structure, built at a cost of $100,000, which was raised by popular subscription.——Mrs. O. H. P. Belmont and others who founded the Hempstead Hospital, Mineola, L. I., are said to be dissatisfied with the management of this institution. Recent action by the directors aims to do away with the hospital and to sell the property to Nassau County for an almshouse.

Antisyringe Bill Passes.—The assembly has passed the Boylan bill making it unlawful to sell at retail or give away hypodermic syringes or needles, unless the purchaser has a written order from a duly licensed physician or veterinarian. When syringes are sold to persons with orders the dealer is to enter the date of the sale and the name and address of the purchaser in a book kept for that purpose. The object of the bill is to reduce the rapidly growing drug habit.

Personal.—Dr. Robert E. Doran, Albany, has been appointed superintendent of the Long Island State Hospital, Flatbush, and Dr. Edward P. Case, Patchogue; has been appointed missionary of the American Board of Commissioners of Foreign Missions and, after six months' study in Paris, will go to Aintab, Turkey, and later to Erzeroum, Persia.——Dr. Eugene B. Horton has been appointed city bacteriologist of Niagara Falls, vice Dr. Harry C. Dumville.——Dr. G. H. A. Clowes, Buffalo, has gone abroad.——Dr. Charles H. Ludlum, Hempstead, is reported to be seriously ill with septicemia.

Bill Affecting Cold Storage.—The Senate Committee on Public Health has amended the Brennan bill and reported it favorably. The bill proposes to limit the period that foodstuffs could be kept in cold storage to six months, or if the State Commissioner of Health, or the State Commissioner of Agriculture permitted it, to one year. In its new form the period has been extended to ten months. Butter products are excepted and may be kept in cold storage for twelve months. The new bill requires the stamping of all foodstuffs received by cold storage warehouses with the date of receipt and gives the State Commissioner of Health authority to inspect and supervise all storage and refrigerating plants, to adopt reasonable rules for the protection of the consumer, and to designate persons to inspect warehouses.

New York City

New Hospital.—A new hospital in connection with the Ottilie Orphan Asylum in Jamaica, Queens Borough, has been dedicated.

Faculty Changes.—Dr. Henry Pike has been appointed assistant professor of physiology and will have charge of the undergraduate course at Columbia University.——Dr. Warfield C. Longcope, of the University of Pennsylvania, has been appointed assistant professor of medicine.

To Teach Office Hygiene.—The new Union Hospital, it is announced, will undertake to direct business and professional men, educators and ministers as to sanitary conditions under which they should work, and the length they and their employees should work each day and each year to make the most of their time, abilities and health.

Personal.—Dr. William L. Russell, Brooklyn, sailed for Europe April 29.——Fire in the residence of Dr. Joseph D. Nagel, New York City, April 30, caused damage amounting to more than $3,000.——Dr. Louise J. Bucholz, New York City, was given a surprise call April 22 by her friends of the Alumnæ Association of the New York Medical College and Hospital for Women, on the occasion of the twenty-fifth anniversary of her entrance into practice.

NORTH CAROLINA

District Society Meeting.—The fourth annual meeting of the Sixth District Medical Association was held in Durham under the presidency of Dr. William A. Graham of that city. The following officers were elected: President, Dr. John M. Manning, Durham; vice-president, Dr. Charles Henry Peete, Warrenton, and secretary, Dr. Charles Augustus Woodard, Durham.

Personal.—Drs. J. Howell Way, Waynesville, and William Oliver Spencer, Winston-Salem, have been reappointed members of the State Board of Health.——Dr. Bessie Puett, Dallas, has completed her term of service as assistant physician at the Williamsburg (Va.) State Hospital for the Insane and will enter practice at Dallas.——Major Eugene Beauharnis Glenn, Asheville, M.C., N.C.N.G., has resumed practice after absence of a month at the army maneuvers in Texas.

OHIO

Personal.—Drs. William T. Corlett and J. P. Sawyer, Cleveland, have returned from Europe.——Drs. Rodger Perkins and Howard D. Haskins, Cleveland, have been appointed to make an investigation as to the practicability and possibility of efficient chlorin disinfection of the city water-supply.——Dr. Lester E. Siemon, Cleveland, has been appointed a member of the State Board of Medical Registration and Examination. ——Dr. James A. Park, Columbus, fractured his right arm while cranking his automobile, April 20.——Dr. Edmund C. Brush, Zanesville, chief surgeon of the Ohio National Guard, has been retired with the rank of brigadier general.——Dr. Frank S. Thompson has been appointed a member of the Dayton Board of Health.

Tuberculosis News.—Dr. Henry Baldwin, superintendent of the Springfield Tuberculosis Hospital, has erected two tents adjoining the main building for incipient cases.——The directors of the infirmary for indigent tuberculosis patients of Stark County have suggested that a brick wing be added to the infirmary hospital at a cost of about $5,000.——At the first annual meeting of the joint board of commissioners in charge of the Kinnane Tuberculosis Hospital, it was reported that the average cost per patient had been $1.69 per day. There have been thirteen deaths since the hospital opened. Three patients left the hospital with the disease arrested, and at the end of the fiscal year eighteen patients were under treatment.——The new district tuberculosis hospital, Lima, has cost, for the site, $6,525, and for equipment and appurtenances $65,378.44. The hospital will now accommodate about thirty patients.——A resolution was introduced at the Cleveland Common Council, April 10, authorizing the expenditure of $238,329.12 for the erection of a tuberculosis sanatorium.

Cincinnati

Personal.—Dr. David I. Wolfstein, who was operated on recently for appendicitis in the Jewish hospital, has returned home.——Dr. Charles T. Pearce sailed for Europe, April 30. ——Dr. Otto Jeuttner suffered a stroke of paralysis, April 18, and is reported to be in serious condition.——Dr. James A. Rudolph has resigned from the health department to accept the position of milk and food inspector at Anderson, S. C.——Dr. Karl Zapp, at one time a prominent physician of Cleveland, is ill at the City Hospital with pernicious anemia.

Academy Censors Censure President.—At the meeting of the Cincinnati Academy of Medicine, April 17, the Milk Commission of the Academy, consisting of Drs. Albert Friedlander, Henry A. Woodward and Otto P. Geier, presented its fourth annual report and incorporated the following resolutions which were adopted:

> WHEREAS, Certain members of this Academy have, by innuendo and otherwise, cast reflection on the integrity of the members of the commission in special reference to the financial administration of their work; and
>
> WHEREAS, It has been suggested to the dairymen under the commission's supervision that they have been charged exorbitantly for such supervision; and
>
> WHEREAS, Such action directly impugns the honor of the members of the commission; now therefore,
>
> We, the members of this commission, do demand that these insinuations and the entire administration of the commission, from its inception to the present time, be searchingly investigated by the Board of Censors of the academy, who shall have power to employ an expert public accountant to assist them in their work. Furthermore:
>
> We ask that this report by the Board of Censors be submitted in writing and made the special order of business of the Academy of Medicine for 9 o'clock on Monday evening, May 1, 1911.

A motion prevailed that the academy reelect the commission in recognition of its faithful and beneficent labors. At the meeting of the academy May 1, the board of censors submitted an exhaustive report, which, on motion, was adopted. The report after reviewing the splendid work of the Milk Commission, described in detail their methods of investigation, including the investigation of all accounts by a certified public accountant, and their examination of all who were in any way connected with the affair. Not only was the Milk Commission exonerated from every charge made against them, but the censors adopted a vote of censure against Dr. William D. Haines, president of the Academy, Dr. Frank Lamb and Dr. George Strobach, editor of the *Cincinnati Lancet-Clinic*, on the ground that they had been guilty of unprofessional conduct in their methods of investigation of the work of the Milk Commission.

PENNSYLVANIA

One Board Medical Bill.—On May 4 the "One Board Medical Bill" was passed by the house on second reading, all proffered amendments being rejected.

Gift to Consumptive Home.—Through Dr. Herman L. Duhring, superintendent of the Protestant Episcopal City Missions, the treasury of the Home for Consumptives, Chestnut Hill, has received $2,000.

New Hospital.—The Armstrong County Physicians' Association has sold stock to the amount of $75,000 for the new hospital at Kittanning, which is to cost $100,000. The details for the purchase of the site on which the hospital is to be built have been completed.

Personal.—Dr. Robert Steele has been elected health officer and Dr. Oliver S. Weddell city physician of McKeesport.——Dr. Elmer G. Kriebel, Worcester, is ill with typhoid fever. ——At the reorganization meeting of the Board of Health of Reading, Dr. John N. Becker was elected president; Dr. Samuel L. Kurtz, a member of the committees on adulterations and poisons, and law and ordinance, and preventable diseases; Dr. William F. Marks, a member of the committees on drainage, sewerage and water supply, school hygiene, and registration and vital statistics; and Dr. Charles Roland, a member of the committee on registration and vital statistics.

Health Work in Pittsburg.—The annual report of the director of the department of health and charities, Pittsburg, mentions that the site for the tuberculosis hospital, for which $200,000 has been appropriated, will soon be selected, and that the plans will be ready shortly for the garbage incineration plant which is to cost $100,000. During the year there were 9,601 deaths, an increase of 2 per cent. over the preceding year, which is due, in great measure, to the great number of cases of infectious diseases, particularly measles. The medical inspectors made 80,000 inspections of school children during the year and the bureau of milk inspection, 17,797 inspections.

Philadelphia

Free Lunches for School Children.—The experiment begun in March by the lunch committee of the Home and School League, in order to prove the beneficial effects of the three-cent lunches (a warm meal at noon) on fifty children selected from the Woods School has been prolonged for an indefinite period.

For a Stricter Poison Law.—A conference at which Dr. Neff, Director of Public Health and Charities, and Dr. Christopher Koch of the State Pharmaceutical Board were present, was held at the private office of Coroner Ford, for the purpose of drafting a new and more stringent law governing the sale of cyanid of potassium and other deadly poisons and placing the bill before the legislature.

School for Consumptives.—Because of a disagreement with the superintendent of buildings of the board of education, the Phipps Institute has withdrawn its offer to erect an open-air school for incipient consumptives and generally weak children on the roof of the General McCall School, and instead will build its shelter and conduct its experimental classes on the roof of the College Settlement Building at Fifth and Christian Streets.

Dr. Oliver's Bequests.—The will of Dr. Charles A. Oliver gave his entire estate, valued at $15,000, to charity. The will directed that the estate be divided in three parts and the income be distributed: for the establishment of the Charles A. Oliver operating room at the Wills Eye Hospital for indigent blind and lame, to the University of Pennsylvania for an annual gold medal to the leading medical student in ophthalmology, and to the College of Physicians for the purchase of journals on ophthalmology. Dr. Oliver left his ophthalmologic library to Harvard University.

Plans to Reduce Infant Mortality.—Dr. Joseph S. Neff, Director of Public Health and Charities, has asked the mayor to send a special message to Councils urging that body to appropriate $5,000 to further the summer campaign against infant mortality. The plans for this work include the maintenance of the open-air hospitals on the Race and Chestnut street piers, keeping them open day and night, the establishment of a third recreation pier at Shackamaxon Street Wharf and the erection of a tent for open-air treatment of babies in Fairmount Park, provided the Park Commission will grant permission.

GENERAL NEWS

Orthopedists to Meet.—The twenty-fifth annual meeting of the American Orthopedic Association will be held in Cincinnati, May 15-17, under the presidency of Dr. Albert H. Freiberg. Headquarters will be in the Hotel Sinton. One of the features of the meeting is announced as the address by Dr. Edward H. Bradford, Boston, on "Currents and Counter-Currents in Medicine and Surgery."

Congress Committee on Organization.—The seventh meeting of the committee on organization of the International Congress on Hygiene and Demography was held in the Army Medical Museum, Washington, D. C., April 15, with Dr. Abraham Jacobi, New York City, in the chair. Dr. Joseph W. Schereschewsky, U. S. P. H. & M.-H. Service, was made director of the exhibition. An exhibition building is to be constructed on government land between the Washington monument and the Continental Memorial Hall for an exhibit in connection with the meeting of the International Red Cross in the spring of 1912, and the plan for this building, which has a floor space of 17,500 square feet, may be modified so as to accommodate the exhibit of the congress. The proposal will be investigated. The executive secretary was instructed to invite the executive officers of the life-insurance companies of the United States and Canada to contribute suitable exhibits of their mortality experience or medical statistics, with due regard to the elements of age, race, nativity, occupation, locality, anthropometry and other pertinent facts of medical or general interest.

PRESIDENT TAFT AND THE MEDICAL PROFESSION

Banquet and Reception to President Taft and Invited Guests

Given by the Medical Club of Philadelphia at the Bellevue-Stratford, May 4, 1911

The Medical Club of Philadelphia gave an elaborate banquet May 4, President Taft being the guest of honor. This delightful affair is commented on editorially in this issue. A report of the speeches follows, some of them being given in full.

The reception following the banquet was held in the greater ballroom of the hotel, beginning at 9:30 p. m.

DR. WILLIAM L. RODMAN, president of the club, presided and felicitously presented each speaker. In an appreciative tribute he introduced the President, saying, in part:

We could, sir, as loyal and patriotic Americans, spend more time than is allotted to us in reviewing your magnificent administration, its fruitful and beneficent results, and commend you for the unflinching courage and admirable patriotism shown in administering to the affairs of the nation. Twice in as many years have you called the national Congress to assemble in extraordinary session that it should do its plain duty by the people and enact legislation that it had failed to pass in ordinary session. It would be a superlative pleasure to review at length the many things which you have done for your fellow citizens at large, and which have caused you to be acclaimed by the foreign press as having done more to make possible international peace than any of your illustrious predecessors or contemporaries.

But we are only a lot of doctors, interested but untrained in matters of state, devoted to our profession and grateful to all who have lessened human suffering and have, by the opportunity offered by public station, inspired and enabled us to do better work in the line of our calling. No one, sir, has shown a greater appreciation of what American medicine has done, and can do, than yourself. Every official act as governor, secretary and President, affecting matters medical, has demonstrated your comprehensive and judicial grasp of the question under consideration.

The 8,000,000 inhabitants of the Philippines can never forget that you gave them educational, administrative and commercial advantages hitherto unknown to them; but, better than these, you, by a wise administration, gave them health by encouraging the study of tropical diseases, which has practically put an end to devastating epidemics of cholera and plague; and by segregating all lepers on the Island of Culion leprosy will eventually be stamped out. The hospitals of Manila are splendidly equipped, admired by all who visit them, and must ever remain as a monument to your constructive genius. In your brief administration in Cuba that troublous and turbulent people were quieted as if by the magician's wand. There you nationalized sanitation by causing to be created a department of health with representation in the cabinet. Formerly a perpetual menace to this country's health and commerce, Cuba is now visited by thousands as a winter health resort.

But greater than this was the work wrought on the Isthmus of Panama by the Medical Corps of the Army under your orders as secretary of war. This zone, for many years so inhospitable to human life that it was abandoned by the French, is now as healthful as Washington or Philadelphia. A work is there progressing, with a pace which almost staggers the imagination, that must, when finished, increase our importance as a world power, double the efficiency of our Navy and add countless millions to our commerce. Congress and the nation support you almost solidly in your insistence that so important, so costly, so strategic a position should be fortified. To do less would be to indulge in iridescent dreams that the day of universal peace—indeed, the millennium—were at hand.

But I should say that your greatest work, so far as our profession is concerned, was your urgent insistence in both of your annual messages to Congress that all of the governmental forces, outside of the Army and Navy, should be coordinated into an effective whole, and made into a Bureau or Department of Health. This the American medical profession has wanted, advised and worked for at least a quarter of a century; but you, sir, are the first president who has both recognized that it should be done and courageously insisted on it.

Much more could be said, but the proprieties of the occasion require that I should give way to one whom every body has come to hear. "Nothing can cover his high fame but Heaven." Therefore, gentlemen of the club, I wish to present you, your guests, and this magnificent audience to the President of the United States.

Address of President Taft

PRESIDENT TAFT arose amid cheers and, after the demonstration had subsided, said, in part: The "City of Brotherly Love" is one of the most important medical centers in this country. When, therefore, this Medical Club invited me to attend one of its meetings I gladly accepted, because it seemed to me that if I had any message to the medical men of the United States I could not find a more favorable place to deliver it than here.

Since 1898 and the Spanish war the people of the United States have been a colonizing and colony-holding people. We have become responsible for the welfare of Cuba, Porto Rico, the Isthmus of Panama and the Philippines. We have had under our care and guardianship the hygiene and the health of tropical peoples, and, while I should be the last one to minimize the importance and value of the benefits that we have conferred on the inhabitants of the tropics thus coming under our government of a political and economic and educational character, I do not hesitate to say that we have been most distinctly successful in the measures we have adopted, maintained and enforced for the improvement of the health and physical condition of these peoples in the torrid zone, over whom we have assumed guardianship.

It is not too much to say that the prevalence of yellow fever in Cuba and its constant recurrence as an epidemic in Havana and other cities of that island, so near to our own shores, threatening death to our own southern cities, was one of the chief causes, and, I may add, one of the real justifications for the popular feeling that led to the Spanish war. Hence it was that no sooner did we take Cuba, to bring it under our control, then the most strenuous efforts were directed toward cleaning it up as a pest-hole and changing its character as a neighbor dangerous to health.

The same task fell on us in assuming possession and control of Porto Rico, in undertaking the government and improving the conditions in the Philippines, and finally in the preparation of the Canal Zone for the construction of the canal. In the first three of these tasks of hygienic reform the control of governmental methods devolved in the first instance on the Army, because the early governments were all military governments. In consequence the health regeneration in these three colonies became the work of the Medical Corps of the Army; and so well was it performed that when the necessity for cleaning up the Canal Zone and making it healthful became apparent we took a member of the Army Medical Corps and put him in charge.

THE SANITARY REGENERATION OF CUBA AND PORTO RICO

It was while we were in Cuba that Walter Reed, an army doctor, investigated and verified the correctness of the theory announced some little time before, that the germ of yellow fever was conveyed from one human being to another by a certain species of mosquito. This discovery revolutionized the method of treating yellow fever, and it was made clear that the great effort and expenditure of money required to clean up Havana and the other infected towns, while useful in the prevention of other diseases, had little or no effect to prevent yellow fever. An entirely different course of procedure had to be followed. It was adopted in Havana and the other cities of Cuba, and was most successful; and one of those officers engaged in the work was Colonel Gorgas, of the Army Medical Corps.

Then we took over Porto Rico. We found that in that island the people were not suffering so much from yellow fever, but there was what was called "tropical anemia," and it was not long before an army doctor, Bailey K. Ashford, discovered that this was not the result of starvation and the absence of nutritious food, but was a disease due to the presence in the intestines of the so-called hookworm, and that it yielded to treatment, and that the many deaths and the general disability that the hookworm produced in the people of Porto Rico could be avoided in the future by comparatively simple and specific treatment. Half a million people have been the recipients of this treatment and have recovered, and a second campaign is now being planned of greater thoroughness, preparation and practice, which will doubtless rid the island of this disease.

THE TASK OF SANITATION IN THE PHILIPPINES

In the Philippines we did not encounter yellow fever, for that as yet had not reached the Pacific; but we found there, in glorious exuberance, cholera, bubonic plague, beriberi, malaria, small-pox, amebic dysentery and leprosy. By improving the water-supply and introducing mountain water into Manila, at a cost of $2,500,000, and by the introduction of artesian wells in many of the towns and villages of the interior, by regulations as to the food-supply, by a new sewage system in

Manila, costing $2,000,000, and by regulations securing the proper and safe disposal of sewage in the smaller towns and villages, and by the use of inoculation with cholera lymph, we have greatly reduced the number of victims from cholera in those islands. By a wholesale vaccination of all the inhabitants of the Philippines, carried on carefully and rigorously, we have practically stamped out small-pox of all kinds in the islands, in which the black small-pox of the most virulent type, flourished before our coming. By a crusade against rats and a cleaning up and destruction of the foci of the disease we have taken all the terrors in the Philippines out of bubonic plague. By careful attention to the destruction of the mosquito we have greatly moderated the injurious effects from malaria, and, while amebic dysentery continues to be a most dangerous and lingering form of disease in the Philippines in many cases, if treated in time it is subject to the control and cure of the remedies discovered and adopted there.

When we went to the Philippines lepers were at large. There were leper hospitals in Manila, in Cebu and in some other parts of the country, but the horrible and sickening character of them beggars description. We have segregated the lepers in all provinces in the islands to the number of 4,000, and have taken them to Culion, a beautiful island in the southern seas, have given them almost a self-governing colony and have made them so happy and comfortable that we have now no difficulty in inducing all persons afflicted with this disease to join the colony. The effect of this segregation has been to reduce the new cases annually of leprosy to 16 per cent. of what they were formerly.

One of the most obstinate and difficult diseases in the Philippines, and, indeed of the whole Orient, has been what is called "beriberi." For a long time the cause of it was beyond our discovery. But now it has been definitely traced to the use of polished rice as food. I need not go further than to say that 24 per cent. of the Japanese army were afflicted with beriberi during the Russian-Japanese war. The change of this food from polished to unpolished rice has practically stamped out the disease in the Philippines. This is a discovery since I left there, and I speak of it without practical knowledge, but only on report, but I know that the disease was under examination by the expert pathologists and investigators during my entire stay in the Philippines, and that the present discovery is only in keeping with the progress and success made in every other direction in the official inquiries made into the causes of tropical and Oriental diseases and their cure.

I may add that the investigations which have been made by our physicians into the character of the intestines of the native Filipinos indicate that those intestines are, if I may so say, a veritable "zoologic garden" of germs, microbes and bacilli that greatly enfeeble the race, and that by proper treatment might be eliminated, and the constitutions of the people at large greatly strengthened; and in the course of our stay in the Philippines I doubt not but that this method of strengthening the race will be pursued with greater and greater success.

SANITARY ENGINEERING IN THE CANAL ZONE

With all this experience, secured by our army doctors and those civilian physicians who followed them in Cuba, Porto Rico and the Philippines, we came to the problem of the construction of the Panama Canal, in a region as pest-ridden as any on the face of the earth. It is not too much to say that yellow fever and malignant malaria, known there as the "Chagres fever," contributed more than any other one cause to the failure of the French to build the canal; and when we went to the Zone to begin operations we found there lingering and ready to offer the same obstacles up to that time so fatal to success in this great work; but the Spanish war and the responsibilities it had thrust on us had given such light on the method of meeting and reducing these obstacles that we have finally swept them away. It took two years for us to make the necessary preparations before we could begin the work of excavation and construction. Those were a hard two years, with thoughtless critics demanding when the digging was to begin, criticizing every effort made and prophesying a dismal failure of our work. But we had selected as our medical officer a man who had acquired his knowledge in Havana and had practiced the new remedies there, and, with the resources of the government at his back, Colonel Gorgas changes a pest-ridden zone into a district as free from disease as any of the states of the south. He stamped out yellow fever so that for now more than four years there has not been a case on the Isthmus, and he reduced the malignancy and extent of malaria on the Isthmus to such a point that the percentage of deaths in the foreign population in the Zone is considerably less than in our large cities. He has made the Zone a pleasant place and a healthful place to live in. This great work of construction goes on without thought now of the dangers which made French success impossible.

Is not such a record one on which we can dwell with the utmost national pride? Does it not speak marvels for American courage, energy and scientific thoroughness, skill, research and power of original discovery? Other countries have been in the tropics for nearly two hundred years, and yet I do not think it an exaggeration to say that in the short twelve years that we have been responsible for the health of our peoples in tropical climates we have made more progress in the discovery of methods of prevention and cure for tropical diseases than all other countries have made in those two centuries.

OTHER SANITARY ACHIEVEMENTS

And now we have a division of 18,000 men in Texas and California. They have been there for two months living under canvas and in a country soaked with rain and deep with profanity-provoking mud. But so effective have been the regulative and preventive methods adopted to reduce sickness that the percentage of sick men is less than it was in the posts from which these men were mobilized. I need not recall the dreadful record of sickness from typhoid fever in the camps at Chickamauga and other camps established during the Spanish-American war. The percentage of typhoid cases was so high that it is hard to believe. Of 120,000 men there were twenty thousand cases, with a case mortality of 7 per cent. Of the volunteer regiments mobilized during the Spanish-American war 90 per cent. became infected with typhoid fever within eight weeks from the date of mobilization. To-day, two months after mobilization, with the modern health regulations and by the use of vaccination against typhoid, not one case of typhoid fever has appeared in the entire force, except that of one teamster, who was not vaccinated. It is hard to credit the accuracy of such a record. But, as I have it directly from the war office, I can assert it as one more instance of the marvelous efficacy of recent medical discoveries and practice.

When we consider how in times past the efficiency of an army has been reduced by large percentages through disease we can realize what an important part of the army the Medical Corps has become. But, without reference to war, when we consider the enormous advances made in the discovery of methods of preventing disease in the tropics, by members of the Medical Corps and under government auspices, and all within the last thirteen years, I think we may take pardonable pride in the record.

We expended many lives and much money in the Spanish war and in the discharge of the responsibilities that have followed that war. But they are as nothing compared with the benefits to the human race that have already accrued and will continue to accrue from the discoveries made under the conditions and necessities which the exigencies of that war and the governmental burdens following it presented.

I congratulate the Medical Corps of the Army, I congratulate the medical profession at large (for these discoveries were not all made by army doctors), that they have had the opportunity, and have seized it, to make such progress in relieving the suffering of the human race and in becoming, in so conspicuous a way, the benefactors of mankind.

Following his address President Taft was made the first honorary member of the Medical Club of Philadelphia, his certificate of membership being handed to him by Dr. Rodman.

Dr. Rodman, introducing Dr. S. Weir Mitchell, said: It is fitting that the President of the United States should be followed by the most distinguished and widely renowned physician in America, one who shares with Lord Lister of Great Britain, the mother country, the honor of being the world's two most famous medical men. We should felicitate ourselves, Mr. President, on the fact that the English-speaking peoples have given to science the greatest living physician and the greatest living surgeon. Not only does the gentleman I shall next present represent the noblest, the most cultured, the most ethical sentiments of American medicine, but he is your friend and former host, and the *beau idéal* of the Philadelphia profession. It gives me great pleasure to present—he needs no introduction—Philadelphia's most illustrious citizen, the eminent physician, the medical author, the historian and poet—"a man so various that he seems to be not one, but all, mankind's epitome"—S. Weir Mitchell.

The Debt of the Country to Physicians

DR. S. WEIR MITCHELL, Philadelphia, said, addressing President Taft: It is pleasant as citizens of the world to congratulate you and ourselves on your endeavor to establish arbitration and promote peace between the two great branches of the English-speaking race; nor could there be a more fitting occasion to remind you, and through you the people of this country, how deeply they are in debt to the American physician. For us this occasion is eloquent of opportunity. Your own profession of the law owes to you the illustration of judicial appointments where the only partiality shown was for ideal fitness and the possession of personal qualities such as your own life on the bench and at the bar has amply exemplified.

I said, sir, just now, that the country was in our debt. I would like to add that the country is of late more heavily than ever our debtor. We owe it to you, and I may add in part to your energetic predecessor, that you have given to the members of our profession who represent us in the ranks of the Army the first chance in the history of the world to prove what the intelligent despotism of educated discipline can enable the physician to effect for mankind. The chief of staff of the Army, General Leonard Wood, once—and he says "always"—a physician, with a group of young surgeons, swept the yellow-fever plague out of Cuba and freed the world from this terrible scourge; alas, at what sad cost! They cleared the island also of malaria and there and in the Philippines put an end to small-pox. You, sir, well know that it was Colonel Gorgas and his staff who have made so swiftly possible the gigantic engineering surgery which will have cleft the Isthmus of Panama from sea to sea. This was our opportunity; it was unique; and I beg to remind you, sir, and my fellow physicians, with pride, that our use of it was an unequalled display of hygienic competence.

You, sir, may not recall as I do what we did in the great war which welded the states into one. North and south the physicians remained an undivided guild in the service of humanity, while churches and the state were rent asunder. What our brothers in the south lost we do not know. We, ourselves, lost in battle 51 killed and 83 wounded, and 283 who died from disease. We have asked, sir, no reward; neither pensions, places, ambassadorships, nor even presidencies, have been for us. No memorial speaks of these great services; our dead are unrecorded in the annals of the war. The land is populous of statues of private and general; there remains for us the unrewarded consciousness of duty simply done in obedience to a creed old before Christ had spoken His great message to the world. You are, of course, aware that after a great victory general or admiral had sometimes been rewarded by the thanks of Congress. Is it too much to expect that when our flag leads a procession of the navies of the world through that great canal, Congress will commemorate the event by thanking, in the person of Colonel Gorgas, those who have read mankind a lesson in sanitary efficiency and for whom no other reward is possible? Again, Mr. President, accept our thanks for the latest chance to read into action our creed of duty.

We have been in the past nobly equal to every task laid on us, and, perhaps, sir, we may hopefully look forward to seeing in some future cabinet a secretary of health, who will enable us to do on a larger scale what we have so admirably effected in the far-sown islands of the sea.

DR. RODMAN, introducing Dr. William H. Welch, said: It is now the highest honor that can come to one of our profession to be chosen president of the national Association. Thrice on the Lupercal did Caesar put aside the crown offered by Mark Antony, but, it is said, each succeeding time more gently than before. It is within the knowledge of many here that he whom I shall next present, and who is now the honored president of the Association had, before his election, more than thrice put the crown from himself, and in a way that left no one to doubt that this gentle, wise and excessively amiable man could, when necessary, be as impregnable as Gibraltar itself.

I unhesitatingly declare that he has done more for American medicine than any medical man since Samuel D. Gross; for while possessing an unusual gift for conceiving and directing "big things," he has not been tied down by the exactions inseparable from private practice. Therefore has he conceived and directed great clinical hospitals and experimental laboratories, and has been the chief inspiration to more medical teachers and molders of thought in various cities and pathological laboratories of America than any living man. To-day he is in the Hopkins School or Hospital, in Baltimore; to-morrow, in the Rockefeller Institute in New York; and the next day, directing the Foundation in Washington; leaving on the midnight train for Chicago to run the American Medical Association. I introduce to you Dr. William H. Welch.

The American Medical Association

DR. WILLIAM H. WELCH, president of the American Medical Association: The city of Philadelphia has had a large share in making the medical history of this country. To-night it is contributing an event unique and memorable in the reception by this medical club of the President of the nation as its guest of honor. This is an event in which the whole medical profession of this country cannot fail to rejoice and take pride, and I esteem it a high privilege, Mr. President, to be permitted to offer to you, in behalf of the American Medical Association, our cordial greetings and best wishes, and to express to you our profound appreciation and great pleasure in the honor conferred by your presence on this occasion. Permit me especially to express the appreciation and thanks which I am sure all physicians in this country would desire me to offer for the inspiring words which you have spoken and for the fine tribute which you have paid to the work of members of our profession in our colonial possessions. Your voice will carry to the larger public that record of achievement which should be a source of pride to the whole country and to the world.

The American Medical Association, with an actual membership approaching 40,000 and with a much larger potential membership, represents the organized medical profession of this country. During the sixty-five years of its existence it has been a great unifying force, which has reflected the conditions and the progress of American medicine. By improving medical education, [illegible] standards of professional conduct, by [illegible] of beneficial medical and sanitary laws, by protecting physicians and the public from frauds, by promoting the science and art of medicine, by preaching the gospel of public health, and in various other ways this Association has rendered important service, not to the medical profession alone, but also to the people as a whole.

The great conquests over disease which have been set forth to-night so clearly and fittingly by the President are wholly the result of a remarkable extension of our knowledge during the last three decades into the nature and causes of the infectious diseases, which are the diseases of the greatest racial and social significance to mankind. At no previous time in the world's history could such a record of triumphant achievement have been attained. It is in the power of man to control to-day great pestilences, such as yellow fever, cholera, pernicious malaria and the plague, and even more devastating, although from their familiarity less dreaded diseases, such as tuberculosis, typhoid fever and infantile diarrhea, because Koch and Pasteur and Ross and Reed and a host of workers in the new fields of bacteriology have discovered how these diseases originate and spread, and have thereby placed sanitary practice on a rational and scientific foundation. It is immensely gratifying that our country has been able to furnish to the world the most striking example in the history of preventive medicine of the conquest of a great scourge by the extirpation of yellow fever through the discoveries of Reed, Carroll and their colleagues of the Army yellow fever commission and the practical application of these discoveries by Colonel Gorgas—all names of undying fame. These, as well as all of the discoveries in this domain, are triumphs of the experimental methods of research.

We know that you, Mr. President, in your administrative duties in the Philippines, in Cuba and on the Isthmus, have been brought into close touch with this life-saving work of physicians and sanitarians, the results of which, as you have authoritatively stated, constitute the greatest of our services to the peoples of these possessions, and we know also that you have aided and furthered this work in important ways by your advice, cooperation and sympathy. I desire on this occasion, on behalf of my colleagues of the medical profession, to pay tribute to the great services which you have thus rendered, and to the intelligent and sympathetic interest which you have repeatedly manifested by word and by deed in the cause of public health.

Public hygiene and preventive medicine have acquired an economic and social significance among the organized forces of civilization but little appreciated to-day by the general public or by legislators and administrative officers of government. They occupy a field quite apart from systems and schools of medical practice. The great International Exhibition of Hygiene, which has just been opened in the city of Dresden, affords an impressive demonstration of the methods and results of public health administration and activities, and of every kind of effort in the conservation and promotion of the health of the peoples of the world. It is deplorable and greatly to our discredit that of all the civilized nations of the world ours is the only one not officially represented in this international exhibit. We have, however, an opportunity to make partial amends for this slight dereliction by adequate governmental support and vigorous efforts in behalf of the success of the International Congress of Hygiene and Demography to be held in the city of Washington in September, 1912, on the invitation of our federal government.

It is a remarkable and significant fact that in order to make an impressive showing of what our country has done for public health we have to pass beyond the boundaries of this broad land which we inhabit and tell of what we have done for the peoples of distant islands and on the Isthmus of Panama; and it is true that our nation has organized better for scientific and practical sanitary work in these possessions than it has done at home.

We have a few highly efficient municipal and state departments of health, but we should have many more. The contributions of the Massachusetts State Board of Health to the principles of purification of public water-supplies and of sewage disposal, and of the New York City Department of Health to the administrative control of tuberculosis are recognized everywhere as of the highest importance. The state of Pennsylvania is setting the pace for the rest of the country in liberal support and efficient conduct of its department of health.

The activities of the Public Health and Marine-Hospital Service, our chief national health agency, have greatly improved and extended in recent years on both the scientific and the practical sides, but a larger and better plan of organization of our federal health agencies is urgently needed.

The health of the people is the greatest asset of the nation and should be the first consideration of governments. The interest of medical men in this subject differs in no respect from that of the rest of the community, nor is this interest longer confined to the medical profession. It is incredible that any one who has any realization of the suffering, inefficiency and enormous waste to the country resulting from preventable disease and insanitary conditions of living and of work can fail to appreciate the incalculable benefits to our people which would accrue from larger hygienic activities of the national government in ways entire consonant with our form of federal government and within the proper scope of such government.

Did our federal government not fall so far short of its plain duty in the way of promotion of public health, we should find here at home records of as beneficent achievement as those which have been cited from distant lands, and our own people would reap the full benefits of that ever-advancing knowledge of disease and its prevention, which carries its messages of hope to mankind.

Dr. Rodman, introducing Dr. Charles A. L. Reed, said: We have heard from the distinguished President of the American Medical Association, who has told us of its achievements and its purposes. I shall next present a man who had much to do in making the Association what it is, for it was under his presidency that the epoch-making reorganization occurred. A Cromwell was needed and the alert, the lion-hearted, the determined president of 1901 was equal to every constructive and parliamentary emergency at the meeting in St. Paul.

Moreover, he, as Chairman of the Committee on National Legislation, has served not only the profession, but the public in a way that few appreciate. As a member of the committee for ten years, together with the distinguished gentleman who has just spoken, I know something of the splendid work he has done in bringing about necessary and wholesome changes for both profession and public.

Although living in the Middle West and carrying on an extensive practice, he never hesitated to go to Washington when the call of duty was sounded. He recked not whether it was the Army reorganization bill, the pure food law, or the Dodds bill under consideration. He was always there and his presence was an inspiration to his followers, and a dismay to opponents.

I present to you the Queen City's best-known surgeon and author, the fellow-townsman and admirer of our distinguished guest—"one not in the rôle of common men"—Charles A. L. Reed.

National Medical Legislation

Dr. Charles A. L. Reed, Cincinnati: The Medical Club of Philadelphia stands for much in this country. It typifies not only fraternity, organization and effective ultraism, but shows the strength and vitality of the present-day movement, not only to lengthen but to broaden and to make happier the span of human life. That movement is fortunate in having here to-night such a leader as President Taft has shown himself to be. As Governor-General of the Philippines, he established medical education on a governmental basis in that country. As Secretary of War, as I happen to know, he cut the bands of red tape that officious officialdom had wrapped about Colonel Gorgas and that were hampering him in the very sanitary administration that alone has brought the great engineering achievement at the Isthmus within the range of possibility. So with the sanitation of Cuba, the reorganization of the Medical Corps of the Army, the enforcement of the pure food law and the development of the great Red Cross organization, President Taft has shown himself the actual leader in the very movement in behalf of the people to which movement alone the medical profession stands consecrated.

What shall be the next forward step? What are some of the conditions to be met? The people of this country are dying from preventable causes alone at the rate of more than one a minute. This is an impressive fact whether viewed from an economic or humane standpoint. It is likewise impressive that Congress has failed to furnish an adequate national mechanism to assist in staying this havoc, a havoc that is equivalent five times over, to the death every year of every officer and man in both the Army and Navy of the United States. It is true that we have some public health agencies scattered throughout five departments of the Government and it is likewise true that each of five members of the Cabinet takes a whack at being national health officer. This, of course, is all very absurd and, as I know from personal investigation in Europe only last summer, it makes us the laughing-stock of the world. But Congress seems to be destitute of pride as it appears to be destitute of interest in this subject. It seems to be sorely afflicted with constitutional lawyers who have been authoritatively defined by President Taft as lawyers who have ceased to be lawyers and gone into politics. These wiseacres seem to think it constitutional for the government to educate the people to protect swine but not to educate them how to protect themselves against disease. They seem to think it incontestably constitutional to control interstate commerce but entirely unconstitutional to control the sanitation of that commerce; or, in other words, they assume that the healthfulness of an interstate commodity is no attribute of that commodity at all. They concede that the government can and does exercise jurisdiction over the navigation and commerce of interstate waterways but contend that it has no right so to regulate the sanitation of such waterways as to make such navigation and commerce possible. In the Ohio Valley we have a thousand miles of river and a thousand miles of typhoid; from which it would seem to be entirely constitutional for the United States to use its streams for the dissemination of disease and the destruction of the people.

The derelictions of Congress in dealing, for instance, with the plague condition in this country cannot be hidden by its surreptitious expenditure of a half million dollars epidemic fund every year in fighting conditions many of which ought never to have become established. I could lengthen this indictment against Congress by giving you a fresh count every minute for an hour. It is enough to say that for every one of the more than 600,000 deaths from preventable causes in the United States every year each member of Congress has a certain measure of individual responsibility. The sooner he is made to feel that responsibility and feel it by votes of the people, the better. As the President has just stated, clearly the next step forward must be a more highly evolved national health service. Whether "department," "bureau," "commission" or "board" it should be so constituted that every available agency and every branch of modern science shall be brought to bear in solving the complex problem of human health and human efficiency.

Dr. Rodman, introducing Surgeon-General Stokes, said:

The sister service, the Navy, is in every sense the equal of the Army—they cannot be dissociated—and by its ability, its chivalry and cosmopolitanism, has so maintained the credit of our country in foreign lands as justly to cause it to be one of the chiefest prides of the American profession. No wiser and better administrative act was ever done than that which placed medical officers in command of hospital ships. If hospital ships are necessary, and assuredly they are, who else can so well command them as well equipped surgeons? We have with us to-night one who commanded the hospital ship *Relief* in the now famous cruise around the world. He originated a war plan which adds to the military efficiency of the fleet, attends to the humanities of battle, and bids fair to revolutionize some features of naval warfare. The judgment he displayed, together with his executive ability and charming personality, caused him to be promoted to the honorable post of surgeon-general—a position that he now adorns, and should for many years adorn. "He has a head to contrive, a tongue to persuade and a hand to execute."

I take great pleasure in presenting one, who, though surgeon-general and holding the rank of admiral, likes to be caned plain doctor—Charles F. Stokes.

The Sanitary Organization of the Navy

Dr. Charles F. Stokes, Surgeon-General, U. S. N.: With the exception, possibly, of medicine and surgery, no branch of science has been more completely revolutionized than that of naval warfare. Not only has this great change been effected in ships and personnel, but in spirit and aims. Spars, sails and wooden hulls have given way to the grim monsters of steel that carry our flag to-day. The change in the personnel has been almost as radical. The agile, cat-like top men, of the age of spars and masts, have been replaced by the seaman-mechanic, the gunner-mechanic and mechanics of other sorts. The muzzle-loading rifle, of decidedly indifferent effectiveness, has given way to the high-powered breech-loading rifle with smokeless powder, and a projectile of almost a ton of metal. Instead of, as in the past, having its field of usefulness limited largely to the treatment of sick sailors, the Medical Department of the Navy, to-day stands side by side with the fighting branches in adding to military efficiency and all that has to do with making the winning of battles possible.

You physicians in civil life are giving considerable attention to the so-called occupational diseases. Those diseases have been for a long time the subject of careful study by naval medical officers, not on economical and humanitarian grounds, as they would interest you, but on the score of pure military efficiency; for example, the solution of the problem of sustaining life in disabled submarines is a complex proposition. It is something more than simply generating oxygen and removing carbon dioxid; it has to do with the so-called fatigue-poison, hydrogen given off by batteries, the gasoline emanations, and so on. The men who manipulate the search-lights must be screened from actinic rays, otherwise their sight is seriously damaged. Ears must be prepared for and protected against the blasts of gun-fire. The continuous use of telescopic sights by gun-pointers frequently leads to serious impairment of vision. It is on these men that we must rely for accuracy of fire. The constructors may give us stable battleships, the ordnance officers high-powered rifles, and the commanding officers may maneuver the ships with consummate skill; still, if the men who point the guns cannot see straight, we are not going to have hits, and the outcome of battle may hinge on this remediable defect.

An ophthalmologist of recognized ability is studying the vision of gun-pointers in the Atlantic fleet, and without doubt the crippling effects of this industrial disability will be averted and military efficiency thus very materially advanced.

Sanitation has made the building of the Panama Canal possible; with the completion of the canal the field of operations of the battleship fleet will be practically doubled; in other words, the Atlantic fleet will be placed within striking distance of the Pacific and conversely the Pacific fleet will become effective in the Atlantic. No more impressive demonstration of the value of sanitation to a military establishment could be pointed out.

Any war plan which fails to take into consideration the sanitary features of the problem—the term sanitary is used in its broadest military sense—and to benefit by the best advice obtainable along these lines, should be cast aside as incomplete and likely to break down under actual battle conditions. Such a plan, must, of necessity, be *one-sided*. Until recently the Atlantic fleet was so organized that, had it gone into battle, the breakdown in the medical department would have been one of the most appalling in history. This condition of affairs was the result of a one-sided development. The awakening of a new spirit in the Navy Department, one of coordination and cooperation, in other words team-work, with military efficiency as its prime object, has made the solution of this problem possible. It is perfectly plain that medicine and surgery, by virtue of what they are doing and have done to promote military efficiency, stand in the front rank of the fighting arms of the nation to-day, and any attempt unduly to subordinate them or to deprive them of the recognition that is their due should be combated to the bitter end.

If the regulations or the laws make it impossible to put into operation effective organization and administration, then the laws and regulations must be changed to meet the new conditions. If these conditions of naval warfare have been such as to relegate to oblivion wooden ships, sails and spars, and with them much of the romance of the sea, then there should be no hesitation in casting aside cherished traditions, often clung to tenaciously for the sake of these traditions themselves, to make way for practicality and effective accomplishment. Responsibility should be recognized by appropriate rank and in this, as compared with foreign navies in all branches of the service, there is much to be desired.

The watchwords of the Navy Department to-day—and these watchwords have been instilled into us by our illustrious Commander-in-Chief—are, first and foremost, military efficiency, to be accomplished by coordination and cooperation, team work, close scrutiny of expenditures, the avoidance of needless waste; in other words, effective practical economy. Organized along these lines it is safe to say that the Navy will give as good an account of itself in the future as it has in the past, and its very preparedness will make it a potent factor in maintaining peace.

Dr. Rodman, introducing Surgeon-General Torney, said:

There is no abler, more representative, more patriotic a body of soldiers on the face of the earth, whether in peace or on the firing line, than the Medical Corps of the United States Army. It has not only demonstrated this ability and patriotism in times of war, when almost superhuman strength and courage were necessary to attend properly to the large number of wounded entrusted to its care, but it has done even more in peace, by demonstrating the cause of yellow fever and malaria, and ameliorating the terrors of each. The heroic and self-sacrificing experiments of Carrol, Reed and Lazear can never be forgotten either by their medical confreres or humanity for whom they died.

The Medical Corps of your Army, Mr. President, made it possible to build the Panama Canal after others had signally failed in this audacious and world-astounding enterprise. It was placed in such command, sir, by your orders as secretary of war. Its work has been characterized by Dr. Mitchell as "[illegible]" and so successful was the operation that [illegible] operator, was unanimously elected Pres[illegible] Medical Association.

We have with us this evening the distinguished head of this corps, a man, "modest, kindly, all accomplished, wise." I now call upon and introduce to you that surgeon, soldier, gentleman—General George H. Torney.

Sanitary Progress in Fort and Field

Dr. George H. Torney, Surgeon-General U. S. A.: Of the records of the history of our country there are none more interesting than those of the Medical Department of our Army. It began at the siege of Boston in 1775. Without going into details it will suffice to state that no adequate provision was made for its administration until it was forced upon Congress by General Washington, because of the large *morbidity* and *mortality* rates amongst the troops of the Revolutionary Army.

At the end of the Revolutionary War the Army was practically disbanded, and its medical department went out of existence. After the War of 1812 there was a reorganization of the Army, but in this reorganization the Medical Department received scant consideration.

Engaged in that war was Assistant-Surgeon Beaumont, who was destined to make his name in the medical history of his country. In 1822 Alexis St. Martin, of whom you have all read, suffered from a wound of the stomach, which was finally cured, leaving a fistula. Fortunately for science he fell under the care of Surgeon Beaumont and when in 1825 the wound of the stomach of Alexis St. Martin had healed, Surgeon Beaumont began his experiments in the study of the physiology of digestion. In the light of history Beaumont should be given the credit as the first *scientific* investigator in physiology in our country. For it was he who instituted and carried out his investigations with all the acuity so well illustrated by modern methods. His work will endure forever.

The Mexican War brought to the Medical Department of the Army a grave responsibility in the care of the sick and wounded, and also the management of epidemics in a foreign land, and those of you who have had experience in this work will appreciate the labor involved in the solution of such problems. In this connection it must be remarked that the medical department of an army on a peace basis is inadequate in personnel for war, and this statement applies to all other armies as well as our own. The very suggestion for adequate provision of the medical department of an army seems to appall the administrative authorities of the service.

When the Civil War began the Medical Department of the Regular Army was small in numbers, and on it was thrust the medical administration of a vast army which, through the early part of the war, could not be made efficient because of inadequate personnel and lack of appreciation of its needs.

The Civil War developed Jonathan Letterman, a surgeon of the Army, of whom but a few of you have heard, but whose name stands out most prominently in the medical history of the War of the Rebellion. It was he who organized and administered the Medical Department of the Army of the Potomac under a system which was adopted by other armies in the field. There was much opposition to his policy of administration, but the War Department and Congress ultimately recognized its merit.

At that period the Medical Department had frequently 80,000 patients under its care. Exceptionally these numbers ran over 100,000, and in one instance 120,000 patients. To-day Letterman's system for the administration of the medical affairs of the Army of the Potomac has been adopted as original by the military authorities of Europe without credit to its author, and with no mention of the United States.

After the termination of the Civil War the medical and surgical history of the War of the Rebellion was written by the officers of the Medical Department of the Army ,and to-day it stands as a monument of the industry of the men who engaged in this work. At the same time was begun the Index-Catalogue of the Library of the Surgeon-General's Office. At first it was a pamphlet of twenty small pages; to-day it is the greatest work of its kind in the world.

From the end of the War of the Rebellion to the beginning of the Spanish War, the Army of the United States was occupied in subduing the hostile Indians on what was known as the frontier. In these wars the officers of the Medical Department were fully engaged with their brothers of the line and exposed to the same dangers. At the outbreak of the Spanish War the personnel of the Medical Department was inadequate in numbers for the care of its own sick, and the sudden increase in the volunteer forces, for which no adequate provision had been made, added to its burden.

During this war a board composed of Vaughan and Shakespeare of the volunteer forces and Reed of the regular Army investigated the epidemic of typhoid fever which preveailed in the volunteer Army. The conclusions of this board are valuable to our profession. It is my belief that it proved that typhoid fever is a contact disease in the majority of cases.

After the Spanish War investigation was immediately begun in the study of tropical diseases, which resulted in proving by the board of which Walter Reed, surgeon, United States Army, was the directing head, that the mosquito is the intermediate host for carrying the infecting toxin of yellow fever. Of the brilliant results that followed this investigation you all know. It was due to this discovery that Gorgas, in Cuba, was enabled to stamp out yellow fever, and on his transfer to Panama, as chief sanitary officer, following the same methods to prevent the development of the disease on that Isthmus. It was this discovery, also, that enabled Kean of the Medical Corps of the Army, in Cuba in 1906, as chief sanitary officer of that island, to stamp out yellow fever after it had recurred in that island; and by his efforts to establish a department of public health which is to-day a model for the world. Measured in terms of money it is estimated that the discovery by Reed has already more than paid the cost of the Spanish War, the Philippine War and of the construction of the Panama Canal. I wish also to mention Ashford of the Medical Corps of the Army, who in 1902 began his investigations in Porto Rico as to the cause of the anemias among the inhabitants of that island. His report, with Dr. King of the Marine-Hospital Service, that the hookworm was the parasite that causes a large percentage of disability in tropical countries, was published in 1904.

To-day the Army Medical Department is engaged in an antityphoid campaign for the prevention of that dread disease. This campaign has followed the work of the typhoid board, composed of Musser, Thayer, Lambert, Vaughn, O'Reilly, Russell, Councilman and Flexner. To-day, in Texas, there is a division of the United States troops, every man of which is vaccinated against this infection. In that division not a single case of typhoid fever, which is the disabling disease of armies, has occurred. In the Spanish War typhoid fever developed in 90 per cent. of all the regiments within eight weeks after their organization.

I hope that the import of this statement will be fully impressed on you, since, from a medical point of view, this is history.

Tropical Medicine.—The eighth annual meeting of the American Society of Tropical Medicine will be held in New Orleans, May 18-19, under the presidency of Dr. William S. Thayer, Baltimore. The society will be the guest of the Orleans Parish Medical Society and part of the sessions will be held in its new building. At the morning session on May 18, held in this place, the president's address will be given and papers on malaria will be read. At the afternoon session, held in the Richardson Memorial, Tulane Campus, leprosy will be the topic. On the morning of May 19 there will be a clinic on pellagra at Charity Hospital, and at the morning session, held in the Hutchinson Memorial, Tulane Medical Department, there will be papers and a general discussion on amebiasis. The afternoon session at the same place will be devoted to the election of officers and members, and to papers on pellagra, yellow fever, snake poison, etc. An excursion to the Louisiana Leper Home has been arranged for May 20. The committee of arrangements extends a general invitation to all who are interested and requests those who are coming to notify the chairman, Dr. J. Birney Guthrie, Suite 602, Perrin Building, New Orleans.

LONDON LETTER

(From Our Regular Correspondent)

London, April 29, 1911.

Proposed Compulsory Opening of Windows

The antituberculosis campaign has had great effect in educating the public as to the importance of fresh air, and windows are now kept open to an unprecedented extent. But the compulsory opening of windows is a step which the most ardent hygienist would not dream of advocating in this country, in which the liberty of the individual is valued so highly and the house has been called the "Englishman's castle." However, the health committee of the Paddington Borough Council (one of the metropolitan boroughs) has recommended for adoption the following new by-laws for tenement houses: "It shall be compulsory for all windows of sleeping apartments to be opened wide for at least two hours a day, and for floors to be swept once a day and washed once a week." It is proposed to appoint inspectors with right of entry into the houses to see that the regulations are observed. The maximum penalty for breach of these laws will be $25, and $10 for each day the offense is continued.

The Seventeenth International Congress of Medicine

Arrangements are being made for the seventeenth International Congress of Medicine which will be held in London on August 6-12, 1913. The University of London, the Imperial College of Science and Technology and the City and Guilds College have expressed their willingness to put rooms at the disposal of the congress. It has been decided that the sections of laryngology and otology will be allotted two adjoining rooms and that the councils of these two sections shall arrange their programs in a conjoint meeting, and that their transactions shall be published in one volume and supplied to each member of the section. A section of radiology will be included in the congress. The section of pathology will include a subsection of chemical pathology. A section of anesthesia, both general and local, will be established. Sections XX and XXI of the last congress will be so altered that one section will be devoted to naval and military medicine and another section wholly devoted to tropical medicine. The following alterations have been made in the titles of the sections: Section III, from general and experimental pathology to general pathology and pathological anatomy; Section IV, from bacteriology and pathologic anatomy to bacteriology and immunity; Section XVIII, from hygiene and immunity to hygiene and preventive medicine. Papers introducing subjects for discussion will be previously printed and distributed to all the members of the section who have intimated their intention to take part in the discussion and to any members who may apply for them. The introductory papers cannot be printed in all the four official languages, but abstracts of them will be printed, as was done at the last London congress. In each section, the morning sessions will be devoted to discussions on subjects of interest to be selected by the officers of the sections. Each discussion will be introduced by not more than two speakers, to be selected by the officers of the section, with due regard to the international character of the meeting. It shall not be permissible to read the introductory papers already printed, but a time not exceeding twenty minutes shall be allowed to each introducer to read and elaborate an epitome of his introductory paper. Subsequent speeches in the discussion shall not exceed ten minutes. None but the introductory speakers shall be invited by the officers of the section to take part in the discussion. At the morning session no papers other than on the subjects set down for discussion shall be taken up, unless the general discussion has terminated before the hour fixed for the termination of the morning section. The afternoon session shall be devoted to papers offered by the members of the section. The staff of the section shall have the power of selection from among the papers offered. Not more than fifteen minutes shall be allowed for the reading of any such paper nor more than five minutes for any speech discussing it.

The Cambridge Hospital for Special Diseases

At Cambridge a very small but remarkable hospital was founded five years ago for the study of special diseases by some of the leaders of the profession—Sir Clifford Allbutt, Professor Osler, Sir William Church, Sir Jonathan Hutchinson, Sir Richard Douglas Powell, Sir Henry Morris, Sir W. Watson Cheyne, Sir Victor Horsley and Sir Donald MacAlister. The objects for which the hospital were established were thus stated by the committee: "Much and fruitful research has been done in acute diseases, but there are many chronic and widespread maladies which have not yet received the attention they deserve. These, though not commonly immediately fatal to life, incapacitate the sufferer from active work, cause great pain and misery, and finally leave the victim helpless and entirely dependent on the kindness and charity of his friends or of strangers. Patients suffering from these diseases, owing to the slow progress and long continuance of their illness, are not suitable for reception into general hospitals, which as a rule admit by preference cases of the more acute diseases. The mode of origin or progress of these affections is very imperfectly known, and little therefore can be done in the way of their rational treatment. The great need of scientific research on these chronic diseases has been strongly felt by the medical profession for many years." At present, the hospital is lodged in a small private house containing four beds, and for the most part is supported by subscriptions from physicians. A bulletin giving the results of the work of the staff is issued from time to time. Rheumatoid arthritis is one of the subjects which has been investigated. Though no great advance in knowledge can be chronicled yet much careful work has been done which clears away prevalent misconceptions and may make a path for future advances. The house which is used as a hospital is small and in many ways inconvenient. It has therefore been decided to build a small hospital for which a site of one acre on the outskirts of Cambridge has been secured. The plans have been drawn up. There will be a consulting room, library, three rooms for research, a photographic dark room and a room for *x*-ray apparatus. The cost is estimated at $8,000.

The Teaching of Hygiene in Elementary Schools

Dr. Addison, lecturer on anatomy at St. Bartholomew's Hospital and liberal member of parliament for Hoxton, has introduced a valuable bill: "to require that in public elementary schools instruction shall be given in hygiene, and to girls in the care and feeding of infants." This bill is in no sense a party measure and has received the support of more than 200 members of the house on all sides. Its first reading has been carried unanimously. Since the bill was first introduced last year the principal health officer of the local government board has stated in one of his reports that the provision of this instruction would greatly prevent the waste which has caused so much pauperism in Great Britain. Of late years there has been considerable quickening of the public conscience in this matter, and owing to the efforts of various associations and the voluntary work of teachers and public authorities there has been a remarkable diminution in infant mortality. Nevertheless, one child in every three dies under the age of 5 years, and one out of every five under the age of 12 months. The number of children who die under the age of 5 years amounts to 150,000. The causes are manifold: bad sanitation, crowded rooms, poverty, etc. But Dr. Addison does not hesitate to say that at least 50,000 die as a direct or indirect consequence of parental ignorance. This is particularly true for the manufacturing districts of the north. In the fifteen large Lancashire towns with a population of 3,000,000 the death-rate for the summer quarter of last year was 30 per cent. higher than in London, and this was mainly due to infant mortality. In the town of Burnley, which has an unenviable reputation, the health officer attributes one-fifth of the deaths to the fact that the mothers work in factories and leave their children in charge of ignorant persons.

Plague in India

The recrudescence of plague in India was announced in a previous letter to THE JOURNAL. In reply to a question in parliament, Mr. Montague, the under secretary for India, stated that the situation was very seriously regarded by the authorities who had been hopeful of a permanent diminution, and had made every effort to stamp out the disease. In the central provinces of Agra and Oudh alone the deaths from plague amounted to 43,508 in February and 95,884 in March.

The Lowest Birth-Rate and Death-Rate on Record in Scotland

A short time ago the lowest birth and death-rates on record in England were reported in THE JOURNAL. A similar announcement has just been made with regard to Scotland. The birth-rate for 1910 was 25.16 per thousand and the death-rate 14.66, the lowest figures ever recorded.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 28, 1911.

Illegal Practice of Medicine in the Pharmacies

The Syndicat médical de Paris has just made an attempt to come to an understanding with the Syndicat des pharmaciens de Paris et de la Seine on the question of the illegal practice of medicine in the pharmacies. Unfortunately, after two entire sessions devoted to the joint examination of the important questions interesting the two professions, it appeared evident that the point of view of the physicians and that of the pharmacists were irreconcilable. The delegates from the Syndicat des pharmaciens asserted that the illegal practice of medicine was forced on them by the public and that their business existence depended on it. If one druggist were to refuse to sell non-toxic drugs, the customer would merely go to another pharmacist. The delegates of the Syndicat médical de Paris replied that the simplest drugs might in certain cases be harmful, or at least, useless, and might, if only by causing the patient to lose precious time, become dangerous. The delegates of the Syndicat des pharmaciens then proposed that pharmacists should be granted the right to sell once to a customer commonly used drugs, without a prescription, at the same time urging the patient to find a physician before coming again. This proposition was evidently too contrary to the law of the practice of medicine and pharmacy to be accepted. A medical society, charged with the duty [illegible]sts of the medical profession, could not [illegible] of approving a tolerated violation of law.

The delegates of the medical society proposed that a notice like the following should be posted in all of the pharmacies which wished to accept it, and especially in those of the members of the pharmacists' society: "In accordance with the laws which regulate the practice of medicine and pharmacy, in order to safeguard strictly the responsibility of pharmacists and in the interests of its health, the public is invited, in case of any indisposition, to call in a physician, since any delay in medical intervention may entail irreparable consequences, which might be avoided by the judicious attentions which can be given only by a physician." The pharmacist delegates, however, considered the proposition impracticable. They merely proposed to aid physicians to prosecute for such overt instances of illegal practice of medicine as consultations in the rear of the shops, and systematic dressings, etc., given to patients. They were also willing to take part in a newspaper campaign of publicity with regard to the danger of asking a druggist for drugs without a physician's prescription.

Similar divergencies came to view on the subject of the renewal of prescriptions. According to the law, druggists have no right to deliver drugs on old prescriptions, whether they call for toxic substances or not. The law on this point is violated daily, and the delegates of the Syndicat des pharmaciens declare that this violation is forced on them by the habits of the public. To regularize their irregular situation, they proposed the following principle: "Every prescription which does not bear the words 'not to be renewed' may be filled again." The delegates of the medical association, on the other hand, proposed the following rule, which is in accordance with the spirit of the law and guarantees the safety of the people: "No prescription may be renewed by a druggist, except those on which the physician shall have written the words 'to be renewed.'"

Other divergencies also appeared on the question of the delivery of drugs without prescriptions. The pharmacists expressed a wish that a list of drugs not to be delivered without prescriptions should be drawn up, while the physicians wished that a list should be made of the only drugs which the pharmacist would have the right to sell without prescriptions. Agreement was not reached on any of these points.

Personal

In its session of April 25, the Académie de médecine elected as national correspondents, Dr. Blanquinque of Laon and Dr.

Laguesse, professor of histology at the Faculté de médecine de Lille.

Improvements in the Hospitals

The municipal counsel of Paris has just authorized the expenditure of $2,000,000 (10,000,000 francs) for improvements in the following hospitals: the Hôpital Cochin, the Hôtel-Dieu, the Bicêtre, the Hôpital des Enfants-Malades, the marine sanatorium of Hendaye, situated on the Bay of Biscay, and the Nouvelle-Pitié.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, April 20, 1911.

Personal

In place of Professor Matthes, Professor Moritz of Strasburg has been nominated for first place for the internal medical clinic at Cologne, and it is rumored that Moritz has accepted the call. The singular circumstances that a man should go from a university to an academy and thus sacrifice his position is explained by the fact that Moritz soon after his appointment at Strasburg alienated from himself the physicians of that place and did not possess the faculty of securing himself in his present position. It is to be hoped that this experience will stand him in good stead in his new place.

Inoculation of Syphilis in Rabbits

Professor Uhlenhuth, director of the imperial health office in Berlin and soon to be professor of hygiene in Strasburg, reported, at a recent meeting of the *Berliner medizinische Gesellschaft*, the inoculation of rabbits with syphilis. The injections were made into the testicles and into the blood vessels. By further inoculations into other animals, sixteen transmissions were secured and in this manner the virulence was raised so that the inoculations yielded 100 per cent. of successes. Clinically three forms could be distinguished: Erosions of the scrotal skin, chronic inflammation of the testicle and periorchitis. Histologically the lesions resembled those of human syphilis and contained many spirochetes. Moreover, Uhlenhuth and his coworkers were able, by the injection of very virulent rabbit material into the circulation of other rabbits, to induce general syphilis in these animals. In the circulating blood of these animals living spirochetes could be demonstrated. General syphilis could be produced also in monkeys through the circulation. In the discussion that followed this paper the skepticism which Professor v. Hansemann expressed regarding the etiologic significance of *Spirochæta pallida* for syphilis was remarkable. He admits that the spirochete plays a certain rôle in syphilis, but he doubts that it causes the disease since it is not found in the tertiary forms. In the products of the inoculation there could be found many deviations from the manifestations typical of human syphilis. The other speakers opposed this skepticism with the exception of Dr. Siegel, who used to champion other ameba-like germs as the cause of syphilis. Uhlenhuth asserted in closing that the same symptoms were found in the infected monkeys as in man. That no spirochetes are found in gummas is not singular as even in tubercles it is sometimes impossible to demonstrate tubercle bacilli. He added that malaria parasites have not yet been grown in pure culture, and yet no one doubts their etiologic significance.

Age and Tuberculosis

The Prussian national statistical office has recently published a review of the mortality from tuberculosis in Prussia according to sex and age for 1908 and 1909. In an article in the *Zeitschrift für Tuberkulose* B. Frankel reproduced these tables and remarks that they demonstrate the progressive diminution in the death-rate from tuberculosis. In 1908 there died in Prussia, 63,320; in 1909, 60,871. For 100,000 living there were in 1908 16.40, in 1909, 15.59 deaths from tuberculosis. The mortality from tuberculosis in the first year of life shows in 1908 the high percentage of 26.86 per 100,000 living, the highest in any of the age classes, but in 1909 it was only 23.65. The death rate from tuberculosis of children from 1 to 15 years old has never since 1881 reached so low a figure as in 1909. While in 1881 the deaths numbered 11,000, and in 1902 they were more than 13,000, in 1909 they amounted only to 10,621.

Ward for Pay-Patients at the Moabit City Hospital

At the last session of the city council this new departure which I have previously mentioned was inaugurated. A physician belonging to the Sozialdemokratische party opposed this move as essentially an introduction of class distinctions into the municipal hospitals. He declared that every preference of the better as against the poorer classes was an evil. He was of the opinion that such an arrangement would work prejudicially to the general care of the sick. He wanted no class distinctions in the municipal hospitals and opposed it also on account of the financial interests of the city. In reply to this the mayor emphasized the pressing need of meeting the requirements of the middle classes in the way proposed. Care should be taken to bring the arrangements already present into an orderly legitimate system. He was convinced that by the establishment of a second class, the level of the third class would be raised. So long as class distinctions existed they must be recognized. As a matter of fact there are many people who for certain reasons cannot apply to the municipal free hospitals, who yet are unable to pay the high prices charged by private sanatoria, or for medical treatment at home, without actually impoverishing themselves. If the city should devote a small portion of the public funds to the assistance of these people, a good work would be accomplished. There is no occasion for any uneasiness on the part of the medical profession in view of this undertaking.

Disinfection of Books

Under the heading, "The Spread of Infectious Diseases by Printed Matter," Dr. Trautmann, who is at the head of the state hygienic institute in Hamburg, presents a very interesting article in the *Zeitschrift der Schulärzte*. The possibility of conveying infection by printed matter must be admitted although positive evidence of its occurrence can seldom be furnished. It is evident that circulating libraries constitute an especial danger in this respect. The conveyance of tuberculosis is especially to be feared, because this disease is wide-spread, usually runs a chronic course, giving opportunity for literary recreation for a long time, and further the bacillus is readily deposited on objects by coughing and the disease germs have an extraordinary capacity of resistance. Naturally other diseases can be conveyed in the same way. The use of books at school is not without danger. There is possibility enough for transmission of disease by means of text-books and books from the school library. England, America and Austria have possessed for a long time the beginnings of an official regulation for the disinfection of books. Until a few years ago, however, Germany has had no effective and harmless method for this purpose.

Books are difficult objects to treat; neither dry heat nor streaming steam at 100 C., neither sulphur dioxid nor cold formaldehyd gas gives satisfactory results. At present a solution of the question appears to have been reached and by two entirely different processes. The method of Findel and Xylander consists in the application of hot air at a temperature of 75-80 C. (167-176 F.) with a relative humidity of 30-40 per cent. or even up to 80 per cent. The moist heat acts essentially by conduction and radiation. Unfortunately sterilization by this process requires a considerable length of time. The process for a single disinfection of closed books, and the process is intended for these, requires two days. Moreover only the vegetating forms of bacteria are killed, the resting forms not being affected.

In Glaser's quicker acting modification of this method, air at 98-100 C. and a humidity of 60 to 80 per cent. is employed with the addition of formaldehyd, but there are objections to this method, which seems to be injurious to the books. Trautmann proposes another process which he considers more reliable. He bases it on the investigations of Esmarch and Kister. He calls attention to the process introduced three years ago with the so-called "Hamburg apparatus" which depends on the operation of a stream of steam evaporated under reduced pressure and saturated with formaldehyd at a low temperature. This process has worked well in the disinfection of furs, skins, leather, silk and velvet goods, and is also well suited to the disinfection of books, butterflies, stuffed animals, etc. The most important point is that the Hamburg process operates with streaming saturated steam but at a low temperature, and does its work in a short time, more effectually and at a lower cost. A complete disinfection does not take longer than ninety minutes at the most.

A condition for the successful action of the Hamburg apparatus is the careful spreading of the leaves of the book. It is not suited to the disinfection of closed, thick books or closely packed printed matter. Trautmann uses for the necessary spreading a stout rack in the form of a trough; another method consists in drawing back the covers of the books, tying

Herbert Milton Nash, M.D. University of Virginia, Charlottesville, 1852; the oldest and most esteemed physician of eastern Virginia; died April 26, at the Sarah Leigh Hospital, Norfolk, Va., from shock following an operation for the removal of gallstones, aged 79. After his graduation, Dr. Nash took post-graduate work for a year in New York City, and then began practice in Norfolk, and was the only survivor of the physicians who combated yellow fever in that city in the great epidemic of 1855. On the outbreak of the Civil War he was appointed assistant surgeon of the State Force of Virginia and later was made surgeon and corps surgeon in the Confederate service, where he served throughout the Civil War. He was a charter member of the Norfolk Medical Society and served for several terms as its president; a member of the Virginia State Medical Society and, at one time, its president; and at the time of his death an honorary fellow. He was also a member of the American Medical Association, American Public Health Association and the Southern Surgical and Gynecological Association. He was at one time vice-president of the Medical Examining Board of Virginia, president of the Norfolk Board of Health, president of the Board of Quarantine Commissioners of the district of Elizabeth River, and formerly quarantine officer. He was also a member of the staff of St. Vincent's and the Norfolk Protestant hospitals. In 1902, on the occasion of the fiftieth anniversary of the graduation of Dr. Nash from the University of Virginia, he was the guest of honor of the faculty of that institution. The Norfolk County Medical Society, at a special meeting, adopted resolutions expressing the personal and professional loss felt by its members in the death of its oldest and most esteemed ex-president and member.

Carlton C. Frederick, M.D. University of Buffalo, N. Y., 1881; a member of the American Medical Association, the American Gynecological Society, the American Association of Obstetricians and Gynecologists, president of the Buffalo Academy of Medicine and many local societies; adjunct professor of obstetrics in the medical department of Niagara University from 1883 to 1896, and clinical professor of gynecology in the University of Buffalo since 1897; one of the founders and surgeon in chief to the Buffalo Woman's Hospital, and a member of the staff for many years of the Buffalo General and St. Mary's Lying-In Hospitals; author of many monographs on gynecology and abdominal surgery; died at his home, April 30, from endocarditis, aged 55. At a special meeting of the Buffalo Academy of Medicine, action was taken on the death of Dr. Frederick and eulogies were pronounced by many of his colleagues.

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Lewis S. Brown, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1873; a member of the Missouri State Association, and for several years president of the Knox County Medical Society; died at his home in Edina, April 21, from arteriosclerosis, aged 75.

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them together over the back of the book and hanging a row of books thus treated on the rods in the Hamburg apparatus. Xylander unites the two methods in one. The proposed method of disinfection kills all disease germs and does not injure the books in any way. Trautmann's claims have been confirmed by a thorough trial by Xylander and Glaser. Gärtner selects alcoholic steam for disinfection, but this method is not to be recommended because the disinfection takes a long time and injures the books.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, April 25, 1911.

The Repeated Use of Prescriptions

In this country the doctor's prescription is handed back to the patient by the apothecary who has made it up, only the date of the prescription being added by him. Very often the latter rule is not strictly adhered to; thus the patient is enabled to obtain the remedy for an indefinite number of times. By such means, crimes and suicides have been committed repeatedly here within a short time, lately. Therefore, a memorandum has been presented to the ministry of the interior by medical associations, and the necessity of strict adherence to the existing rules emphasized. Shortly afterward, all druggists and pharmacists, as well as doctors, were admonished by an ordinance of the ministry to turn their attention to the abuse of medical prescriptions by patients. The law requires that every filling of a prescription be marked on it by the dated stamp of the dispenser. If "heroic" remedies or strong poisons and other narcotic substances are contained in the prescription, the doctor should add how often the patient may have it made up by writing down: *Ne repetatur*, or *Repetatur semel*. Attention is chiefly drawn to the hypnotic and narcotic substances of modern chemistry, which are not yet contained in the "poison list," but which are most often the object of repeated administrations by the patients. On this point the interests of the public are coincident with those of the profession, although naturally the impossibility of obtaining a remedy without consulting a physician will be found an unpleasant difficulty by many easy-going patients.

Marriages

Francis Winslow Johnson, M.D., Glyndon, Md., to Miss Marion Lawrence Reese, at Baltimore, April 24.

Davis Thomas Bowden, M.D., Paterson, N. J., to Miss Helen W. Bryce of Passaic, N. J., April 19.

Raymond H. Gaynor Laub, M.D., Brooklyn, N. Y., to Miss Lucretia Ferris of Elmira, N. Y., April 24.

John Richard Callaway, M.D., to Miss Luella Louise Wingfield, both of Kansas City, Mo., April 29.

Andrew Johnson Brown, M.D., The Dalles, Ore., to Miss Marie Wetzel of Portland, Ore., April 20.

James Southall Wilson, M.D., to Miss Julia Gardiner Taylor, at Williamsburg, Va., April 17.

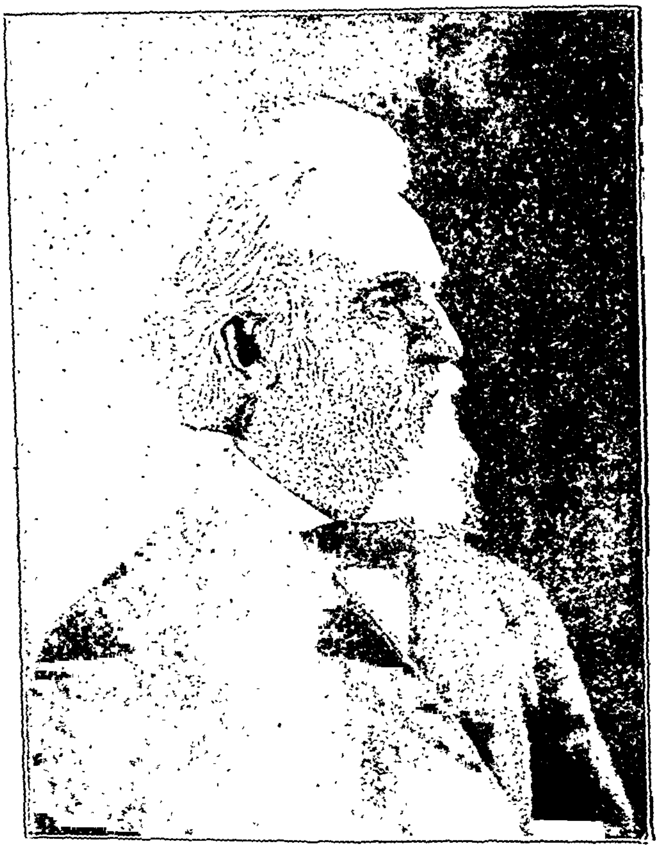
Arthur H. Meyers, M.D., Mystic, Conn., to Miss Helen M. Barker of East Orange, N. J., April 21.

Peter H. Jobse, M.D., to Miss Minnie Fitzgibbon, both of Milwaukee, April 26.

Deaths

Isaac Newton Danforth, M.D., one of the best beloved of the older physicians of Chicago; died at his home, May 5, from heart disease, aged 75.

Dr. Danforth was a descendent in direct line of Nicholas Danforth who landed in Massachusetts Bay in 1634. His paternal grandfather and three uncles were physicians before him and this naturally turned young Danforth's mind toward medicine. He graduated from Dartmouth Medical School, Hanover, N. H. in 1862, and was given the honorary degree of A.M. by Dartmouth College nineteen years later. After four years of practice in New Hampshire, Dr. Danforth located in Chicago where he soon attained high rank as a practitioner and teacher.



I. N. Danforth, 1836-1911

His work as a medical teacher commenced in 1868, when he became instructor in chemistry at Rush Medical College. Three years later he was made lecturer of pathology; in 1873 president of the spring faculty and in 1881 professor of pathology. His work in Northwestern University Medical School began in 1882, when he was made professor of pathology. From 1887 to 1895 he was professor of clinical medicine in that institution. In 1876 he became professor of pathology in the Woman's Hospital Medical College, which afterward became Northwestern University Woman's Medical School, and continued in this position for nineteen years; and for four years thereafter was dean of the faculty and professor of internal medicine.

He became attending physician to St. Luke's Hospital in 1870 and continued in that position until 1895. For the first ten years of the existence of Wesley Hospital, he was chief of its medical staff; for many years he was pathologist to Cook County Hospital, and consulting physician to various hospitals in Chicago for thirty years past.

His society membership included the American Medical Association, the Association of American Physicians, the Chicago Pathological Society, of which he was once president, and he was one of the founders and first president of the Society of Medical History of Chicago.

Dr. Danforth was a frequent contributor to the medical literature, and more especially of late years, on the lines of medical history and biography; in 1907 his life of Dr. Nathan Smith Davis was published. Dr. Danforth's chief recreation was in the line of history and his collection of Americana was of more than local repute.

In 1909 Dr. Danforth founded a medical missionary hospital in Kiu Kane, China, in honor of his first wife, Elizabeth Skelton Danforth.

He had not been in robust health for a long time, but was confined to his house for only about three weeks. He had been a sufferer with asthma for a long while, but his death was due to valvular disease of the heart.

As a general practitioner, Dr. Danforth was exceptionally successful. He was one of the first in Chicago and the Northwest to use the microscope in pathology. He was a man of steadfast conviction, of most exemplary life and stood always for the best in all things. His death will be deplored by his many friends and by the hundreds of men and women in the profession all over the world whom he has helped, both materially and by wise counsel.

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due to the carelessness of employees." Before the carelessness of employees can be urged as an excuse, it must first be shown (1) that the discipline is such that the railroad has every right to expect obedience and carefulness in general; (2) that the proved character of the employee in any responsible post is such that the road has every right to expect faithfulness from him; and (3) that the conditions of operating are such as, on the one hand, to leave as little room as possible for disaster resulting from carelessness, and, on the other, to place no undue strain on the employee's strength and capacity.

It is gratifying to see that the reputation of these roads, with respect to their care of human life, is highly valued. This augurs well for the improvement of whatever conditions may still remain to be improved.—EDITOR.]

Who Should Apply the Wassermann Test?

To the Editor:—This week I was approached by one who styles himself a chemist asking me to instruct him in the Wassermann reaction. The following copy of the reply which I mailed to him is self-explanatory:

"*My Dear Sir:* Your inquiry yesterday, in regard to my willingness in teaching you the details of the Wassermann reaction, has received the most earnest *consideration* by me. Heretofore I have refused no one who wished to know this work. All such applicants, however, have been physicians.

Personally I should like to teach each one who is interested. The prevalent opinion in Germany to-day is that only trained serologists should do this work. In a recent number of the *Münchener med. Wochenschrift*, K. Taege asserts that only his *ability* as a physician has enabled him to interpret difficult reactions, made by himself, satisfactorily in given cases.

To avoid being personal and prejudiced in this matter, however, I determined to place your letter in the hands of Dr. Paul G. Woolley, director of the laboratory of the Cincinnati Hospital, and to be guided by his decision. Dr. Woolley is of the opinion that I could not give you a certificate, after a period of instruction in this work, stating that you are fully competent to make a correct reading in every case which may come to you for analysis, because of your lack of medical training.

Since you asked me at the end of a period of instruction to give you a certificate stating that at such time you would be fully competent to do this work, and inasmuch as, according to the opinion of Dr. P. G. Woolley, a recognized authority in pathology, I would be unable to do so, I must refuse the offer you so kindly made me."

I am a staunch supporter of the medical profession, and I believe that none but a physician is capable of passing judgment on the question as to whether a given patient is luetic or not. Experience has shown us how difficult this reaction may become in many instances. The physicians of this state are busily engaged in trying to have the optometry bill vetoed, and I think that we all should be equally active in trying to prevent laymen from practicing medicine in any other of its branches. Furthermore no physician ought to give a certificate to any one certifying to his competency to practice any branch of medicine, and least of all in a case of this kind in which a man absolutely without a knowledge of general medicine and its ethics might affiliate himself with the advertising "venereal quack," and become a harpy to prey on the people.

This man now intends to go East with the hope of finding some physician willing to instruct him, and then to return here with a certificate announcing his fitness.

OSCAR BERGHAUSEN, B.A., M.D., Cincinnati.

An Observation Bearing on the Causation of Sex

To the Editor:—I noticed in THE JOURNAL (April 22, 1911, p. 1228) an abstract of a paper by W. W. Kain, "Can the Sex of the Family be Controlled at Will by the Parents?" Kain is said to agree with E. R. Dawson that the supplying ovary is in reality the essential factor in the causation of sex, the right ovary producing the male and the left ovary the female. I believe that a study of the chromosomes with their adjunct sex chromosomes, etc., will dispel any such notions. But that is too big a subject for this letter. I wish at this time only to report a case that came under my observation last October. A girl married at the age of 14; at the age of 15 she gave birth to a boy, and at 17 to a girl, following which she had three miscarriages produced by herself with a catheter. About two weeks following her last miscarriage she died of lobular pneumonia, at the age of 19. Necropsy revealed a tuberculous cavity in the right apex the size of an English walnut, a serofibrinous pleurisy of the right side, a pericarditis with effusion, no inflammation of the pleura of the left side but the pneumonic condition as bad on the left side. The pelvic area showed no evidences of the miscarriages. There was, however, a congenital absence of the left tube and ovary, of which there was not even a remnant, the broad and round ligaments being apparently normal. The right ovary and tube were perfectly normal. Dr. A. E. McDowell assisted me.

W. O. WISNER, Spokane, Wash.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VENTILATION IN THE PUBLIC SCHOOLS

To the Editor:—I wish to get some information about ventilation of public schools. The system in use in our school, and in a large number of schools in New Jersey, is based on the idea that carbon dioxid is heavier than air, which is correct at a certain temperature. The inlet for pure air is placed near the ceiling, in the expectation that the vitiated air will be forced downward to the outlet near the floor. To my mind this reverses the laws of Nature. Gases will expand when heated, volume increased, specific gravity lessened. Just imagine a class of little children seated in a kindergarten on little chairs having the impure air forced down on them in order to get it out through the outlet! When the room is heated to about 70 F. (the transoms and windows and doors closed with this system), does the carbon dioxid rise to the ceiling? If so, why not let it out there? Being a medical inspector, I would like some light on the subject. JOSEPH PAYNE, Midland Park, N. J.

ANSWER.—You will find much information about ventilation and heating in the following books:

Shaw, W. N.: Air Currents and the Laws of Ventilation, 1907. Cambridge Univ. Press.
Monroe, W. S.: Steam Heating and Ventilation, 1902, New York, Engineering Record Series.
Harrington: Practical Hygiene, 1902, Lea Brothers.
Notter, J. Lane: Treatise on Hygiene, 1908, Blakiston.

You state that the inlet for pure air is near the *ceiling* but do not say whether the incoming air is warm or cold. The problem is one of heating as well as ventilation. If the incoming air is warm it will tend to remain near the top of the room. If the outlet is high in the wall the warm air will tend to pass out without either warming the room or materially changing the air of the room. If the outlet for air is at the floor the warm air after raising the temperature of the room will sink and pass off at the bottom.

Carbon dioxid itself in the quantity ordinarily found in rooms is harmless. It is simply taken as an indicator of vitiated air. The amount of carbon dioxid added to schoolroom air by respiration is slight, seldom more than 10 parts per 10,000. Experiments have shown that people confined in small, tight compartments endure without any symptoms of illness or discomfort an atmosphere containing 150 parts of carbon dioxid per 10,000, provided the temperature and moisture are kept low. Tests in crowded schoolrooms under similar conditions show that the pupils are unaffected. Results are different if the temperature is allowed to rise to 70 F. and the humidity is high. It seems well established that results commonly attributed to poor ventilation are not *due to any change in chemical composition* of the air but to physical changes. The solution of the problem of ventilation lies in the maintenance of the normal heat interchange between the body and the surrounding air.

Whether expired air will rise or sink depends on several factors, its temperature, amount of CO_2, moisture content and the temperature of the surrounding air. Taking what is perhaps an average density for expired air, if the temperature of the surrounding air is below 81 F. the expired air will tend to rise. The expired air will tend to sink if the temperature of the surrounding air is above 81 F. and neither rise nor fall if the surrounding air is at this critical temperature. The expired air will sink to the floor after rising and cooling, as it will tend to do in a room temperature of 70 F. unless the flow of air downward made by forced draught is overpowering.

The preparation has been analyzed by the British Medical Association's chemists, who reported:

"Analysis showed the presence of potassium iodid, guaiacum resin, extract of licorice, powdered licorice, starch, mineral matter—apparently a mixture of talc and kaolin—a resinoid substance, and a trace of alkaloid. . . . The quantities of the various ingredients are estimated as accurately as possible, and the following formula was indicated:

"Potassium iodid	1.8 grains
"Guaiacum resin	0.8 grain
"Extract of licorice	1.0 grain
"Resinoid (phytolaccin?)	0.9 grain
"Powdered licorice	1.7 grains
"Rice starch	2.0 grains
"Talc and kaolin	2.1 grains"

The variability of nostrums of this type is well illustrated by the fact that a sample of Gloria Tonic analyzed by Dr. Aufrecht of Berlin showed a different composition from those tablets analyzed by the British chemists. Aufrecht, in an article that appeared in the *Pharmazeutische Zeitung*, June 8, 1910, reported: "The Gloria Tonic Tablets examined consisted essentially of 26.76 per cent. potassium iodid and 2.81 per cent. iron (probably in the form of iron saccharate)."

The price charged for a box of fifty tablets of Gloria Tonic is $1; the estimated cost of the ingredients in these fifty tablets is 16 cents.

Correspondence

The Railroads and Human Safety

To the Editor:—In The Journal, April 15, 1911, p. 1113, after citing the list of accidents shown by the accident bulletin of the Interstate Commerce Commission for July, August and September, 1910, you refer to "the deliberate, cynical disregard of human safety which foreign observers are prone to consider an American characteristic," and say: "When the people are awakened to the possibilities and the necessities of the whole situation, there will be a change."

I beg to call your attention to the Act of Congress, passed April 14, 1910, prescribing the kind and location of safety appliances on all cars engaged in interstate commerce, which, as testified in hearings before the Interstate Commerce Commission, will involve expense on the railroads of $55,000,000. When the commission held hearings preliminary to determining what regulations should be enforced under this law, the railroads offered no objection to the essential features of plans proposed for fully equipping all cars with uniform safety appliances, notwithstanding the enormous expense involved.

J. W. Watson, chief inspector of safety appliances of the Interstate Commerce Commission, in his report for 1909, says:

> "As showing the care with which the safety appliances demanded by the law are being maintained, it may be noted that while the railroads dispensed with the services of a great many employees to meet the economies necessitated by falling off of business in 1907, the force of men employed to maintain safety appliances suffered the least curtailment of any. As a result the condition of equipment continued to improve during the slack period of 1908-09, the year just closed showing the least percentage of defective equipment of any years since the law became operative, notwithstanding that the number of cars examined by our inspectors was 125,000 greater than in any previous year. As indicating the great improvement that has taken place within the past five years, it may be stated that the defects per thousand cars inspected in 1905, numbered 309.56, while for the year 1909 the figure is 74.65.
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> "It is only proper to say that the attitude of most presidents and general managers of railroads has contributed greatly to the good results accomplished. As a rule such officials are in thorough sympathy with the aims and purpose of the law. They have earnestly striven to meet its requirements and have cheerfully cooperated with the commission to secure its effective enforcement."

In his report for 1910 Mr. Watson states that the average of defects found per 1,000 cars had decreased to 65.33 during the year.

The Interstate Commerce Commission's reports show that while in 1900, 67.6 per cent. of the total railway equipment of the United States was fitted with train brakes, in 1910, 99.1 per cent was so fitted. In 1900, 94.3 per cent. of the total equipment was fitted with automatic couplers, while in 1909, 99.3 per cent was so fitted.

The large railroads of the United States paid out for injuries to persons in their transportation departments for the year ending June 30, 1909, $17,705,333. Even were railroad managers controlled by a "deliberate, cynical disregard of human safety" this large payment, which does not fully represent the cost of railway accidents, appears sufficient to cause them to exercise every precautionary measure of safety.

Statistics of the Interstate Commerce Commission will show that a large percentage of railroad accidents are due to the carelessness of employees. Although much railroad legislation has been enacted during the past several years, and a great deal of it in favor of the railway employees at their initiative, no act has ever been passed making it a crime for a railroad employee to disregard a signal or to disobey a rule.

During the railroad rate hearings held by the Interstate Commerce Commission last autumn, many representatives of railroads cited the need of safety appliances, abolition of grade crossings and more substantial construction in general as leading to future increase of expenditure.

While the number of railroad accidents in the United States is greatly in excess of accidents in European countries, yet the conditions of construction here and abroad are very dissimilar. The railroads of Europe were constructed through thickly settled regions and substantial construction was necessary from the beginning.

In the United States the railroads have been largely pioneer enterprises in advance of traffic. The need to get the track down so that the commerce might be served was paramount. So rapid has been the growth of railroad construction that the single track mileage operated in the United States has grown from 192,556 miles in 1900 to 235,402 miles in 1909. At the same time, the rapid growth of population in this country has tended everywhere to render inadequate systems of railroads constructed in comparatively recent years. Vast sums are now being spent in the elimination of grade crossings and for other improvements to promote safety of operation.

In view of these facts, is it quite fair to refer to "deliberate, cynical disregard of human safety" as the attitude of the railroads? Is not the showing that the railroads have made in the interest of greater safety an indication that railroad men are awake to the necessities of the whole situation?

Charles E. Kern, Assistant to Director,
Bureau of Railway Economics, Washington, D. C.

[Comment.—We are glad to give space to this letter, since, as our correspondent has misapprehended our intent, others may have done the same.

We did not impute "deliberate, cynical disregard of human safety" to the interstate railroads, as a class. It will be remembered that the instance cited was one of disregard of human safety by an urban street railway, which, in spite of warnings, since amply justified, laid its tracks so close together that any one caught between two moving cars was almost certain to be crushed and killed. No words can be too strong to characterize the conduct of a road operated under conditions such that the presumption is, from the outset, that loss of life must result. Such conditions exist and they endanger the public. We are glad to believe, however, that such conditions have grown very rare among the railroads to which our correspondent refers.

Our correspondent will doubtless admit that even here there is still much room for improvement. We fear that the weak point in the defense of these railroads is indicated in the statement that "a large percentage of railroad accidents are

MICHIGAN

The legislature has adjourned. The following bills have become laws: A bill to require physical training to be taught in the city schools; a sane Fourth of July bill; a bill placing all maternity hospitals under the state board of health and a bill to require local boards of health to report all cases of tuberculosis. The chiropractic bill was defeated.

MISSOURI

The legislature has adjourned. No bills of special interest to the medical profession have been enacted. The optometry bill was defeated.

NEBRASKA

The legislature adjourned April 2. A bill was passed to establish a board of control for state institutions, also bill to establish a state tuberculosis hospital and appropriating $40,000 for its maintenance. An appropriation of $75,000 was made for the enlargement and maintenance of the state orthopedic hospital. An appropriation of $100,000 was made for new buildings for the state hospital for the insane.

NEW HAMPSHIRE

The legislature has adjourned. A bill to consolidate the three existing boards of medical examiners into one, failed to pass. An optometry bill became a law. An osteopathic bill was defeated. A bill to forbid the use of common drinking-cups became a law.

OHIO

The legislature is still in session.

OKLAHOMA

The state legislature has adjourned. An optometry bill became a law.

OREGON

The legislature has adjourned. A bill to empower the state board to prosecute illegal practitioners failed to pass.

PENNSYLVANIA

The legislature is still in session. No laws of special interest to physicians have been adopted. A bill to provide for a single board of medical examiners has passed the senate and is now in the house. A midwifery, a neuropathic and an optometry bill are in committees.

TEXAS

The legislature has adjourned. The sanitary code drafted by the state board of health was enacted as a part of the statutes. A state tuberculous sanatorium and a state leprosarium were established.

UTAH

The legislature has adjourned. A new medical practice act was passed, also a bill to require physicians and midwives to report all cases of blennorrhea in new-born children within six hours of its appearance.

WISCONSIN

The legislature is still in session. No laws of interest to physicians have as yet been passed.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Tenth Month—Third Weekly Meeting

Causes of Sudden Death (Continued)

Death from Cold: Symptoms. Post-mortem appearances.

Death from Heat: Symptoms. Post-mortem appearances.

Death from Starvation: Acute and chronic. Symptoms. Post-mortem appearances.

Death from Electricity: From electric current, from lightning, or by electrocution. Post-mortem appearances.

Infanticide: By commission or by omission. Evidences of live birth. Appearances of lungs, hydrostatic test. Other organs and tissues. Duration of child's life. Cause and manner of death.

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

American Assn. of Genito-Urinary Surgeons, New York, June 1-3.
American Academy of Medicine, Los Angeles, June 23-26.
American Dermatological Association, Boston, May 25-27.
American Climatological Association, Montreal, Canada, June 13-14.
American Gynecological Society, Atlantic City, May 23-25.
American Laryn., Rhin. and Otol. Society, Atlantic City, June 1-3.
American Laryngological Association, Philadelphia, May 29-31.
American Medico-Psych[illegible] enver, June 19-20.
American Neurological [illegible] May 11-13.
American Orthopedic Association, [illegible], May 15-17.
American Otological Society, Atlantic City, June 26-27.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Proctologic Society, Los Angeles, June 26-27.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Surgical Association, Denver, June 19-21.
American Therapeutic Society, Boston, May 11-13.
Conf. of Bds. of Health of N. America, Los Angeles, June 30-July 1.
Connecticut State Medical Society, Hartford, May 24-25.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maine Medical Association, Augusta, June 28-29.
Massachusetts Medical Society, Boston, June 13-14.
Missouri State Medical Association, Kansas City, May 16-18.
Nat'l Assn. for Study and Prev. of Tuberculosis, Denver, June 20-21.
National Association for Study of Epilepsy, St. Louis, June 16.
New Jersey, Medical Society of, Spring Lake, June 13-15.
North Carolina, Medical Society of State of, Charlotte, June 20.
Rhode Island Medical Society, Providence, June 1.
Wisconsin, State Medical Society of, Waukesha, June 7-9.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Annual Meeting, held at Jackson, April 10, 1911

The President, Dr. J. W. Young, Grenada, in the Chair

A list of the officers elected was given in The Journal, April 29, page 1271.

Delegates to the Los Angeles Session of the American Medical Association were instructed to vote against the proposition to make membership in the state associations include membership in the national organization.

Addresses of welcome were made on behalf of the city of Jackson by Hon. A. F. Crowder, mayor of Jackson, and on behalf of the Hinds County Medical Society by Mr. W. H. Watkins. These were responded to by Dr. H. M. Folkes of Biloxi.

President's Address: Value of a Good Physician to the Public

Dr. J. W. Young, Grenada: I thank God that every real true physician is a gentleman; and an optimist, and an altruist, a "jolly good fellow," and an all-round good citizen—loyal to the flag, loyal to the courts, loyal to his patrons, loyal to everything that is good and true—but, alas, in so many instances he is not loyal to his fellows, or his state and county medical societies. We are altruists for everything and everybody except each other. Why can we not be colleagues rather than competitors? Instead of knocking, why can we not occasionally, at least, take a fellow-doctor by the hand and say: God bless you, my brother, I wish you well and hope you are prospering? No man in any community is more valuable to the public than a good, reliable physician. Others may bring personal comforts, wealth and material conveniences, but on the physician the people must rely to guard their physical welfare, without which wealth would be of little value. In mere money, the value of his services can never be counted.

Medicine in all ages has attracted to its ranks the most self-sacrificing members of society. Medical men stand alone on the earth, they only are striving with their whole might to extinguish their own business. They preach temperance, virtue and cleanliness, knowing well that when people come to follow their advice their occupation, like Othello's, is gone. The time has come when the medical profession must wake up to the fact that it has been largely ignored in the past. The heroism displayed and martyrdom suffered in the medical profession will never be known. There is a quietness about it that distinguishes it as true heroism. We hear little of the many instances of blood poisoning from treating a septic wound; of the brave stand against the most deadly epidemics, of physicians courting death in the most loathsome forms, away from the comforting touch of loved ones, that the sick and dying may not have to fight alone their battle with the pestilence. What a true physician could not be hired to do for all the money the world could offer, he will do joyfully and without expectation of reward, from the higher sense of duty and his love for mankind.

Physicians all over the land have given up their lives in efforts to save others, often leaving loved ones in penury and want. Has anyone ever said that they were heroes, or has any one ever proposed that their dependent ones should share in a hero fund? Nay, verily. The physician walks amid the ruin and desolation of pestilence; he goes forth to dare and do in a supreme effort to save the lives of his fellowmen. Think of the thousands who are being saved from untimely graves by and through the recent discoveries of medical and sanitary science. Think of what Reed and Carroll and Lazear did for mankind in subjecting themselves to the deadly virus of yellow fever to prove the mosquito origin of that disease. Think of what Jenner and Simpson, and Marion Sims, Crawford W. Long and Ephraim McDowell and Koch and others have done for the world. Nearly every organization of any kind has a pension fund. All Christian denominations provide funds for their aged and superannuated preachers. A fund is provided to pension all college professors after twenty-five years of service. All United States judges, from highest to lowest, and all army officers, whether they have seen any service or not, are permitted to retire on a pension at the age of 65. Every Union soldier is the recipient of a monthly stipend from Uncle Sam's treasury. A good physician who has literally worn himself out toiling and working to save the lives of others, when he is no longer able to work, has any one ever been heard to even suggest a pension for him? Nay verily. "Earth's heroes who have gone down in battle or who have been sacrificed to maintain their solemn convictions of duty to country or religion, deservedly receive the honor and praise given them. The hero dead who sleep in the National or Confederate cemeteries of the land are rightfully held in loving remembrance by the people of the sections for which they fought and died, and no one calls in question the homage paid them in holding them dear to memory," but there are other heroes just as deserving of praise, the many true and noble physicians who have died in the line of every-day duty, and gone down to death in the fulness of loyalty to that duty.

This is the life and character of a true physician, and this leads me to the inquiry: Why is it that we as physicians, individually and collectively, have so little influence, and fail so often to get the ear of our legislators? We have never asked for anything for our own personal benefit. All that we have ever asked for was looking to the general welfare of the commonwealth, and rather to our financial detriment than otherwise. It is because of the petty jealousies and the knocking in our own ranks. We are never a unit on anything. As an instance: Several years ago this association passed a resolution declaring that we would not examine for any of the old line insurance companies for less than $5.00, and only a few weeks ago an agent of one of these companies told me that they have an examiner in nearly every city and town in Mississippi and are only paying a minimum fee of $3.00. We always agree to disagree, and hence a house divided against itself must—as a matter of course—fall. Thus by our own action are we discredited by the public at large.

It is usually possible to get an appropriation from the legislature for the study and cure of animal diseases, but when physicians go before the legislature and state that 3,000 Mississippians are annually dying from the great white plague, and half as many from typhoid fever—both preventable diseases—and ask for an appropriation to stay the spread and ravages of these diseases, the door is slammed in our faces and we are charged with the fact that as physicians we cannot agree as to what we want.

On this occasion, therefore, I plead for harmony in our ranks—I plead for better feeling toward and more love for each other—I plead for a fuller exercise of the virtues and graces which should characterize the life of every true physician—I plead for a greater interest in our county and state associations. The very youngest of us has but a very few years on earth; then how much better we must feel when we come to die to know that we have always loved our fellows—to know that we have been kind and loving colleagues, rather than ugly and mean competitors.

Treatment of Chronic Tuberculous Sinuses with Bismuth Paste. Removal of Birth-Marks by Carbon-Dioxid Snow

Dr. S. H. McLean, Jackson, reported a case of tuberculous abscess treated with bismuth paste and one of nevus treated with carbon-dioxid snow. He described in detail the methods of using these remedies.

DISCUSSION

Dr. J. H. Fox, Jackson: Dr. Beck in treating tuberculous sinuses always administers the paste in liquid form to allow it to enter all cavities. He advises that it be applied warm. He also advises the placing of an ice pack over the sinus to prevent the bismuth paste running out. My attention was first called to carbon-dioxid snow by Dr. Gaskell. I have had splendid results with this treatment. I collect the snow in a manner similar to Dr. McLean's method. The time of application varies. In the case of black moles it must be applied longer than in some other cases.

Dr. W. C. Campbell, Memphis: These abscesses are better not opened. The treatment should not be begun until the sinus is three months old. About once a week or five days I fill the cavities. I have seen harm done by giving too much of this paste—with a little care this can be avoided.

Lobar Pneumonia in Infancy

Dr. B. H. Booth, Drew, living in a malarial district, is accustomed to use quinin in all cases of pneumonia and believes it shortens the course of the disease and lessens its severity. He discusses the variations in pathology and treatment in the disease in children as compared with these in adults.

DISCUSSION

Dr. S. S. Carother, Duck Hill: In my opinion, the danger in giving quinin during the progress of pneumonia is too great.

Dr. J. G. Gaither, Oxford: I use no turpentine, but petrolatum and mustard, 1 part mustard to 16 parts of petrolatum. The patient is anointed daily.

Dr. G. W. Wallace, Arbo: I keep these patients in bed and not in their mother's arms. They are allowed to nurse. The child should be kept very quiet.

Dr. B. S. Waller, Silver Creek: I have noticed great difficulty in breathing. I usually make a plaster with a few drops of turpentine, sometimes a little glycerin.

Dr. F. M. Brougher, Belen: It is necessary to keep the lungs warm. I have found quinin of no value in treatment of pneumonia.

Dr. B. H. Booth, Drew: I use quinin because it is a stimulant to a certain extent. In regard to keeping the child in bed, I should like to know how one can keep the child quiet so easily as in its mother's arms.

(*To be continued*)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fifth Annual Meeting, held at Albany, April 18-19, 1911

(*Continued from page 1354*)

Discussion on Salvarsan (Concluded)

Dr. V. C. Pedersen, New York: I want to warn against the indiscriminate use of the intravenous injection of salvarsan; this is a surgical procedure of no small importance. It was my misfortune recently to have a case of nearly fatal collapse after the intravenous injection of this drug. Three weeks before the injection the man was examined very carefully as to his heart and arteries and kidneys and they were found to be normal, so far as one could judge in a man who had had syphilis for twenty-one years.

Dr. J. M. Swan, Watkins: I have recently had a patient with an infected antrum in whose case the infective organism was supposed to be the *Treponema pallidum* and in whom the

Wassermann reaction was said to be positive. The blood had been taken three times, twice from a finger puncture, and once from wet cupping of the back. In my opinion a Wassermann test made in this way is valueless and should not be interpreted as an indication for administration of salvarsan or any other antisyphilitic remedy.

Dr. Edward D. Fisher, New York: Mercury has a curative effect on syphilis, and so has salvarsan. Mercury is not supposed, by most of us, to have any curative effect on parasyphilitic conditions, such as general paresis or tabes. A few of the manifestations that may occur in tabes, such as ptosis, or ocular muscle paralysis, which have been shown to disappear by the use of salvarsan have been known also easily and quickly to disappear with the use of mercury. My position at present in reference to the use of salvarsan in organic nervous diseases is that probably this drug will be as ineffective as mercury. In view of its tendency to induce degeneration, and especially in certain nerve fibers, it is too dangerous a drug until we get further reliable information to use it in these diseases.

The Relationship of Tabes Dorsalis to General Paralysis; Are They the Same Disease Differing Only in Situation of the Lesion?

Dr. Edward D. Fisher, New York: While both diseases are parasyphilitic or metasyphilitic manifestations of a primary syphilis, tabes in its classical or typical form rarely or never presents mental or cerebral symptoms characteristic of general paresis. Tabes is a chronic progressive disease, confining its lesions to the posterior spinal nerve ganglion, posterior nerve roots, posterior columns and meninges of the spinal cord, and the cranial nerves, especially the oculomotor and optic. General paresis is a disease comparatively acute, as compared with tabes, running its course in three years, while the former may continue for twenty years or longer. Its lesions are chiefly cerebral, involving the meninges and cerebral neurones, to a slight degree the cranial nerves, as the optic nerve and the superior nucleus of the oculomotor nerves. The spinal lesions are rarely systemic in type, but fall under the head of a diffuse or combined sclerosis of the spinal columns. In 100 cases of general paresis of the optic or cerebral and tabetic type, only one resembled a classical case of tabes. Clinically the symptoms from cases observed in hospital, dispensary and private practice, while approaching each other in a minor degree, essentially differ in intensity in the more marked symptoms. In tabes, the ataxia is much more extreme, and the lightning pains and crises are much more frequent and disabling. The ocular manifestations are much more constant than in general paresis, whether of the cerebral or tabetic type. It is impossible to believe that a disease essentially spinal in its symptomatology and lasting usually at least twenty years can be the same, differing only in the site of the lesion, as a disease limited usually to three years or even in the unusual or extreme cases to ten years.

DISCUSSION

Dr. E. B. Angell, Rochester: The tendency seems to be to disregard the so-called systemic manifestations of degenerative diseases, and ultimately, so far as possible, to include them under one general classification. Clinically, Dr. Fisher is right, and I believe, so far as treatment and recognition of methods of treatment are concerned, that his views are perfectly sound, but it is rather early yet to come to a definite conclusion regarding this matter.

Dr. W. W. Kidder, Oswego: Tabes is a disease of a definite tract and associated clinically with a definite set of functions which are less general than the functions of the parts affected by general paresis; and from the limitation of the original tabetic affection we would naturally expect it to trespass less on the tissues which are involved in paresis than we would expect the paretic affection to trespass on the tissues affected by tabes.

Paralysis of the Upper Extremity Due to Nerve Injury

Dr. N. Jacobson, Syracuse: This paper is based on four cases: Two involve the musculospiral nerve, one is a complication of fracture of the humerus, the other is the result of a lacerated wound in the lower part of the arm. The third patient sustained a fracture of the neck of the scapula, implicating the brachial plexus, and the fourth case was due to a penetrating wound of the neck severing the fifth cervical nerve. In each instance more or less complete paralysis resulted which was improved or entirely cured by surgical operation.

Experience of the Army With Vaccination as a Prophylactic Against Small-Pox

Col. John Van R. Hoff, Medical Corps, U. S. Army: Wars have taught us that the mobilization of military resources promotes the incurrence of small-pox in armies, and all experience has shown that efficient vaccination and revaccination absolutely control it. We of the medical department would be loath to return to conditions under which one-tenth of mankind died of small-pox, and which obtained up to the beginning of the nineteenth century. These conditions ceased with the application of Jenner's discovery and since have been effectually controlled by vaccination. In spite of all these facts, it is asked: Does vaccination really grant immunity from, or lessen the severity of, small-pox? Is not the gradual disappearance of this infection due to isolation and sanitation? The answer is obvious. Of isolation Chapin writes:

> Small-pox is less likely to escape detection than is any other disease. Yet epidemics grow in the face of the most rigid isolation. Unrecognized cases, even in this disease, are so numerous that the isolation of the recognized cases often seems to be a complete failure. The state board of health of Minnesota, realizing this, has had the boldness to advise that no attempt be made to isolate, and that entire reliance be placed on vaccination. It was hoped that this would lead to more complete vaccination. There has been no alarming increase in small-pox in Minnesota.

A century or more ago tuberculosis and small-pox shared almost equally the unenviable reputation of being the most potent causes of mortality in the human race. To-day tuberculosis still maintains its evil reputation, but among enlightened people the mortality from small-pox is negligible. While sanitary standards and practice have measurably advanced since 1797, they have not yet greatly changed the mortality rate for tuberculosis. Why should they have so marvelously affected that for small-pox? They have not, and we are forced to the conclusion that to vaccination and revaccination alone are we indebted for power to control this formerly devastating and deadly infection. The great blessings of vaccination are not bought for nothing, though they are purchased at a very trifling cost.

Diagnosis of Common Tropical Infections

Dr. S. M. Shook, U. S. N.: New York furnishes a large number of cases of the tropical infections, two of the most important of which, malarial fever and amebic dysentery, may be acquired in the state. Diagnoses of the intestinal infections due to animal parasites may be easily made by examination of a fluid stool. Blood examinations for malarial parasites may be readily made with a good polychrome stain which is stable.

Fracture of the Tarsal Bones

Dr. F. H. Albee, New York: Direct trauma to the plantar surface of a foot is likely to cause a fracture of the tarsal bones. In every case diagnosed as flatfoot, whenever a slight injury has occurred, the patient should be examined for fracture of the tarsal bones. This should include an *x*-ray examination. An important feature in treatment of fresh fractures, is to keep patients from weight-bearing, for at least six weeks, and then only with the aid of an arch support for two or three months longer. The best results are obtained in the treatment of fresh tarsal fractures. One of the essential features in the management of these fractures is attention to the changed fatty conditions. This is especially true in the old neglected cases.

Arteriosclerosis or the Cardiovascular Disease

Dr. L. F. Bishop, New York: In treatment of cardiovascular disease the Nauheim methods are of much value, although it is not easy to define the route by which improvement is brought about. By Nauheim method I mean change of mode of life, environment, change of diet, removal from work and worry, carbonated baths and resistance exercises. It has seemed to me that possibly the carbonated baths in some way promote the elimination of indol and its allied products through the skin. The most important thing in treatment of a case depending on intestinal putrefaction is the regulation of food, the use of suitable cathartics, and the encouragement of the germs of lactic acid fermentation by the use of the less fermentable carbohydrates. Recently I have been using milk sugar. Abdominal conditions, such as enteroptosis and gastroptosis must be attended to. Alkaline mineral waters by counteracting the natural acidity of the intestinal tract often do great harm which appears as a most intense auto-intoxication, after a course of such treatment. I saw a patient this winter in whom, following a severe alkaline reduction cure, there was such intense poisoning of the heart muscle from auto-intoxication that chronic fibrillation of the auricle resulted. The question of alcohol and tobacco must be decided according to the individual case.

DISCUSSION

Dr. D. Ayers, Fort Plain: The principal cause of trouble in these cases is intestinal putrefaction, a general condition of auto-intoxication. It is estimated that about 90 per cent. of the general practice in my section of the state is in connection with conditions dependent on auto-intoxication. I have under observation a woman, aged 74, whose blood-pressure was 260 plus; I do not know how much more than that it was because the scale does not run any higher. She is dizzy most of the time. She has been very toxic for years, and has been constipated ever since she can remember. She has always been a good eater and is jaundiced most of the time. Occasionally she has hemorrhage from the nose. The retinal vessels are very much engorged and varicosities appear. Recent treatment reduced the blood-pressure below the point mentioned, but it is still very high.

Dr. E. B. Angell, Rochester: I am not yet ready to say whether it is intestinal putrefaction or inefficient elimination of the nitrogen material through the kidney that is the cause of most of the symptoms in these cases. However, there is no doubt but that the over-ingestion of meat, or the over-ingestion of nitrogenous food, has more to do with cardiovascular disease than any other one thing. We must bear in mind that meat tends to putrefactive conditions in the intestinal tract.

Dr. J. M. Swan, Watkins: Arteriosclerosis is not an inflammation, but a degenerative change dependent on a great many varying causes, the intemperate use of alcohol and tobacco being among them. But a great many people who have never used alcohol and tobacco, who have had the acute infectious diseases, and who have indulged in the overeating of proteid food as well as carbohydrate foods, have improper elimination of the end-products of these substances on account of insufficient exercise. The disease is a general one, but its symptoms may be manifested in one of three main places: in the kidneys, producing nephritis; in the heart muscle, producing fibromyocarditis, and in the brain, producing the various brain symptoms of arteriosclerosis.

Dr. H. Schoonmaker, Clifton Springs: When we resort to the so-called starvation treatment, that is, putting these patients to bed and keeping them on a milk diet, cleaning the bowels out and giving them rest and sufficient water to drink, it is surprising how much better they get. It has been my observation that the carbon dioxid bath, the so-called Nauheim bath, unless it is materially modified, does not do so well for the patient as the sweating bath.

Dr. F. D. Reese, Cortland: Patients with arteriosclerosis should be put on a restricted diet. I do not care so much what a man eats as I do the amount he consumes. If you can get the confidence of a patient, you will gain one point, then tell him to fast every other day. This seems harsh treatment, but it is the most effectual treatment in arteriosclerosis or high blood-pressure of anything I have prescribed.

(To be continued)

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Kentucky: The Armory, Louisville, May 31. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: Regular, New Orleans, May 18-20. Sec., Dr. A. B. Brown, 108 Baronne St.

Nebraska: State House, Senate Chamber, Lincoln, May 24. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

New York: May 23-26 and June 27-30. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

Wisconsin: Milwaukee, May 24-26. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

New Board in Oklahoma

The Oklahoma State Board of Medical Examiners, as at present constituted, consists of Dr. F. B. Fite, Muskogee, president; Dr. R. E. Sawyer, Durant, vice-president; Dr. F. A. Englehart, Oklahoma City, treasurer; Dr. John W. Duke, Guthrie, secretary; Dr. M. Gray, Mountain View; Dr. Leroy Long, McAlester; Dr. J. O. Wharton, Duncan; Dr. W. L. Bonnell, Chickasha, and Dr. Philip Herod, Alva. The first examination under the new board was held April 13, when thirty-two applicants were examined.

Iowa January Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that at the meeting held at Des Moines, January 24, 1911, twenty candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1910)	Illinois
	(1896)	Nebraska
Northwestern University Medical School	(1906) (1907)	Illinois
	(1898)	Wisconsin
Coll. of Med. and Surg., Physio-Medical, Chicago	(1886)	Wisconsin
College of Physicians and Surgeons, Chicago	(1906)	Illinois
Hahnemann Med. College and Hospital, Chicago	(1909)	Illinois
Chicago College of Medicine and Surgery	(1909)	Illinois
State University of Iowa, College of Medicine	(1908)	Illinois
University of Louisville	(1910)	Illinois
College of Physicians and Surgeons, Baltimore	(1904)	Illinois
St. Louis College of Physicians and Surgeons	(1909)	Kansas
American Medical College, St. Louis	(1903)	Missouri
St. Louis University	(1906)	Missouri
University Medical College, Kansas City	(1910)	Missouri
Starling-Ohio Medical College	(1909)	Ohio
Jefferson Medical College	(1909)	Delaware
Woman's Medical College of Pennsylvania	(1907)	New Jersey
Medico-Chirurgical College of Philadelphia	(1898)	New Jersey

Utah April Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, April 3-4, 1911. The number of subjects examined in was 21; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, of whom 3 passed, including 1 osteopath, and 2 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1908)*	
Jefferson Medical College	(1910)*	
FAILED		
Gross Medical College	(1895)	56
Keokuk Medical College, Coll. of P. and S.	(1905)	73

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Keokuk	(1898)	Iowa
Michigan College of Medicine and Surgery	(1895)	Michigan
Northwestern Medical College, St. Joseph	(1892)	Iowa
Kansas City Hahnemann Medical College	(1904)	Kansas
Albany Medical College	(1908)	New York

* No percentage given.

Medicolegal

License and Proof Required to Recover for Services—Evidence Against Charge of Malpractice—Wealth of Patient Cannot Be Shown to Justify Fee

The Court of Civil Appeals of Texas reverses, on the appeal of Swift vs. Kelly (133 S. W. R. 901), a judgment obtained by the latter party, a physician who brought the action to recover for professional services. The court says that the defendant insisted that the lower court erred in overruling his general demurrer to the plaintiff's petition, in that it failed to show that the plaintiff was authorized by law to practice as a physician and surgeon and to maintain a suit to collect for such professional services. That contention is sustained.

By the Texas statute, as amended by the legislature in 1901, boards of medical examiners were established, a license from which was required as a condition precedent to the right to practice medicine and surgery in the state; and one article provides that any person who shall practice medicine, surgery or midwifery in the state in violation of the statute shall be fined or imprisoned, and it shall not be lawful for him or her to recover by action, suit, motion or warrant, any compensation for such services. It is well settled that a physician practicing in Texas without the license required by the statutes cannot recover for his services. A compliance with the requirements of the law regulating the practice of medicine and surgery having been made a condition precedent to the right to so practice, it is necessary for one suing to recover for such services to allege and prove such compliance, and a failure to so allege in the petition is fatal on general demurrer thereto.

It is also well established that, in the absence of proof to the contrary, it will be presumed that the laws of other states are the same as the laws of Texas on the same subject. The plaintiff failed to allege in what state his services were performed. If they were performed in Texas, then the Texas statutes would apply as a matter of course. If performed in some other state, then the presumption would obtain that the same statutes had been there enacted and were in force. It was not sufficient that he alleged in his petition that he resided in a certain other state, was a physician and surgeon, practicing his profession in such state, and was a professor in a university in such state.

Then, over the defendant's objection, the plaintiff was permitted to introduce in evidence the defendant's promissory note in the plaintiff's favor for $500 of the amounts sued for, and also letters and telegrams from the defendant to the plaintiff requesting an extension of time for its payment. The ground of the defendant's objection was that, as the suit was to recover on a promise to pay the reasonable value of the services, evidence showing a contract to pay a specific sum was irrelevant and incompetent. The evidence was not admissible to prove the value of the services rendered by the plaintiff. But, among other defenses, the defendant alleged unskilful and negligent treatment of him by the plaintiff, and offered evidence in support thereof. As against that defense, the court thinks the evidence to which the objection was made was admissible as the same would be in the nature of an admission at variance with the defendant's plea of unskilful and negligent treatment.

Lastly, this court is of the opinion that the lower court erred in permitting the plaintiff to show the reasonable value of his services by proof that the defendant was wealthy, coupled with further proof of a custom among physicians to graduate their charges according to the financial condition of the patient, and to charge a wealthy patient a higher fee by reason of his superior ability to pay. The suit was to recover the reasonable value of professional services rendered by the plaintiff. In 30 Cyc. 1600, it is stated that there is a conflict in the authorities on this question, and the announcement seems borne out by the decisions there cited. In Robinson vs. Campbell, 47 Iowa, 625, one of the cases cited, it was held that such testimony is not admissible, and the reasoning there advanced this court thinks is sound. Certainly no court would hold that the value of ordinary labor could be determined by such a test, and on principle this court can see no distinction between such a claim and one of the character now under discussion. If the recovery sought in this suit for professional services had been on an alleged implied contract by the plaintiff to pay such fees as are customarily charged for the same character of services performed for a patient of like financial ability to pay a fee therefor, then a different question would be presented, but, as the same is foreign to the record, the court foregoes a discussion of it.

Book Notices

Manual of Diseases of Women. By W. E. Fothergill, M.D., Assistant Gynecologic Surgeon Royal Infirmary, and the St. Mary's Hospital. Cloth. Price, $3 net. Pp. 433, with 144 illustrations. New York: William Wood & Co., 1910.

Certain parts of this compendium will be found useful for the general practitioner, more especially the student and the nurse. The anatomy and embryology are handled exceptionally well. It is to be regretted that, in the chapter devoted to physical examination, the author has practically ignored asepsis. He has not even remotely suggested the use of rubber gloves, the sterilization of hands and instruments, or in any way recognized the need of protecting the examining physician, or emphasized the danger of infecting the patient with dirty technic. Several methods mentioned of preparation of the field of operation could well be relegated to the antiquities of surgery. In discussing the treatment of infections, the author warns against washing out the protective lactic acid bacilli in the vaginal secretions with the vaginal douche; yet further on, in contradiction to these views, he recommends the treatment of acute pelvic infections with the hot douche. Although the author intimates his belief in the radical removal of the glands and perimetric tissue in uterine carcinoma, he fails to recommend specifically or in any way to describe the radical Wertheim operative procedure.

An Introduction to Surgery. By Rutherford Morison, M.A., M.B., F.R.C.S., Edin. and Eng., Professor of Surgery, University of Durham. Cloth. Price, $2.50 net. Pp. 162, with 151 illustrations. New York: William Wood & Co., 1911.

As its title indicates, this work is intended as a preliminary course for students in the study of general surgery. The author states in the preface that it is his aim to direct the student toward the main principles of diagnosis and treatment, thereby simplifying and making rational the treatment of the various surgical affections. In some particulars this object has been admirably realized. The chapters dealing with inflammation and sepsis are good, treating the subject in a practical and lucid manner. The same may be said of the treatment of the surgical diseases of the hollow viscera, the diagnosis of syphilis, tuberculosis and malignant disease, and also of the chapter on ulcers and gangrene.

On the other hand, it appears that comparatively too much space, which might better have been given to some subjects treated briefly, has been allotted to others of minor importance. Also, some subjects have been introduced which today are not ordinarily included in a course of general surgery. A little more accuracy in the definition of certain terms might have been exercised and the use of some obsolescent terms avoided.

The work is profusely illustrated with well-executed sketches, diagrams and photographs, which add not a little to its value as a students' text-book.

The Influence of Storage and Various Preservatives on the Dissolved Oxygen in Waters. By Dr. Arthur Lederer. Paper. Pp. 14. Sewage Disposal Investigations, the Sanitary District of Chicago, 1910.

The conclusion is drawn from a considerable number of chemical analyses that the addition of 1 c.c. per 8 ounces will preserve the content of dissolved oxygen in both unpolluted and polluted water for sufficient length of time for samples to be transported to the laboratory for examination. The percentage reduction of dissolved oxygen in stored samples is believed to constitute a "fair index of appreciable pollution."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Southern Medical Journal, Nashville, Tenn.

April

1 Aneurysm of the Arch of the Aorta. J. B. Murfree, Murfreesboro, Tenn.
2 Cancer of the Cervix Uteri—Its Treatment. A. G. Payne, Greenville, Miss.
3 Pathology and Treatment of Ununited Fractures. J. N. Baker, Montgomery, Ala.
4 *The Artificial Leech in Acute Mastoiditis. U. S. Bird, Tampa, Fla.
5 *The Heath Mastoid Operation. M. M. Cullom, Nashville, Tenn.
6 *Operative Treatment of Fractures. C. W. Allen, New Orleans.
7 *Operative Treatment of Fractures of the Long Bones.. J. L. Crook, Jackson, Tenn.
8 *Radical Cure of Painful Halux Valgus (Bunion). H. P. Cole, Mobile, Ala.
9 *Occurrence of Intestinal Parasitic Infections Among the White Patients at the Florida Hospital for Insane. R. N. Greene, Chattahoochee, Fla.
10 *Carbonic Acid Baths in Treatment of Heart Disease. J. H. Honan, Bad-Nauheim, Germany.
11 *Collapse of the Trachea While Performing Thyroidectomy. T. C. Witherspoon, Butte, Mont.
12 Anterior Poliomyelitis. O. H. Wilson, Nashville, Tenn.
13 Id. C. M. Nice, Birmingham, Ala.
14 Treatment of Anterior Poliomyelitis. A. W. Harris, Nashville, Tenn.
15 Certified Milk. D. T. McCall, Mobile, Ala.

4 and 5. Abstracted in The Journal, Nov. 26, 1910, p. 1920.

6. Abstracted in The Journal, Dec. 3, 1910, p. 2005.

7. **Fracture of the Long Bones.**—Crook reports four recent cases of fracture of both tibia and fibula in which he operated, and in all of which he secured good results, a result which, he says, could not have been obtained without operation.

8. **Painful Halux Valgus.**—Cole reports one case in which he used Mayo's method—resection of the head of the first metatarsus, removal of exostosis; restoration of joint by inserting flap of synovial tissue between stump of metatarsus and base of first phalanx. The result was perfect.

9. **Occurrence of Intestinal Parasitic Infections.**—Among 220 white men in the Florida Hospital for the Insane, Greene found ninety-two cases of uncinariasis, or a percentage of nearly 42. The 187 women examined showed a total of 87 cases of uncinariasis, or a percentage of nearly 47; 4 per cent. more women than men showed uncinariasis in this series. These examinations show for the total number of cases in the white departments of the hospital a percentage of nearly 44. Forty-two patients not showing hookworm infection, or a percentage of over 10, were infected with other forms of intestinal parasites, namely, trichocephalus trichiuris, oxyuris vermicularis and ascaris lumbricoides. Taking these other forms of intestinal parasites into consideration in the computation of the percentages would reveal the surprising result, that among the 407 persons examined, there were found 221 cases of intestinal worm infection, or a percentage of 54. Round worms were found associated with hookworms in two cases, one of these being in each sex. *Trichocephalus dispar* infection was noted with uncinariasis in twenty-six cases, sixteen among the women and ten among the men. Triple infection was noted in three patients, all men, the parasites present being *Uncinaria americana, Ascaris lumbricoides* and *trichocephalus trichiuris*. Greene advocates that every county and municipality appoint a physician for special work along this line, and that he should; under the direction of the State health officer, make at frequent intervals an examination of the feces of every individual within the limits of his prescribed area.

10. Abstracted in The Journal, Dec. 3, 1910, p. 2006.

11. Abstracted in The Journal, Jan. 14, 1911, p. 141.

New Mexico Medical Journal, Las Cruces

March

16 The Internal Ear in the Light of Recent Investigations. I. E. Friedman, Carlsbad.
17 The Medical Service and the Law. E. L. Medlar, Albuquerque.

Journal of the Delaware State Medical Society, Wilmington

April

18 Exophthalmic Goiter. H. F. Smythe, Odessa.

Journal of the Missouri State Medical Association, St. Louis

April

19 *Colon Bacillus Pyelocystitis in Infancy and Childhood. D. E. Broderick, Kansas City.
20 Experiences with Tuberculin Therapy in Dispensary Practice. S. T. Lipsitz, St. Louis.
21 *Teaching Medicine Aright. R. H. Jesse, Columbia.
22 Common Abuses of Surgery. W. F. Grinstead, Cairo, Ill.
23 Transposition of Appendix. B. B. Parrish, Kirksville.
24 What is the Key to the Permanency of a Voluntary Association of Individuals in a Common Cause? A. B. Freeman, Joplin.
25 Salvarsan in Syphilis. J. L. Boehm, St. Louis.
26 Relation of the Physician to the Dentist. J. Miller, Maryville.

19. **Pyelocystitis.**—Six cases are reported by Broderick, five of them occurring in females, in each of which there was a preceding history of ileocolitis within six months of the urinary infection. In only one of the cases was there a rigor; it lasted twenty minutes. There was slight vulvitis in two cases. Broderick adopted Thompson's method of treatment. It consists in the administration of potassium citrate (from 48 to 60 gr., increasing to from 120 to 180 gr. in the twenty-four hours). There will be noticed a rather marked change as the urine becomes alkaline. Hexamethylenamin, in doses of from 3 to 5 grains, is frequently administered. Broderick combines the two methods, giving the citrate in increasing doses, every two hours, until the urine is alkaline. He then gives hexamethylenamin, in doses of from 3 to 5 grains, three times daily. The remaining treatment is that of any infection of the urinary tract.

21. **Teaching Medicine Aright.**—The experiences and the sober thought of thirty-three years—thirty of them (from 25 to 55 years of age) spent as dean or professor or president in three universities, each with a medical department, are laid bare by Jesse. He says that people need not have much knowledge of anatomy or physiology to understand that to learn medicine aright one must have considerable previous training; nor is it necessary to know the length of the alimentary canal to see that professors who spend most of their time in private practice, devoting only spare time to teaching, cannot give the best instruction. If any professional school aims at excellence, it should admit no students that have not had at least four years of good high school training and two years more in a college. In preparation for medicine these two years should be devoted to general chemistry, physics, zoology, botany, French, German and English. Moreover, no school can now give good instruction in medicine unless it has a library, a museum and a number of laboratories, all well-equipped, and each occupying several rooms. How many laboratories are indispensable? The most modest estimate would surely include (1) anatomy, (2) physiology, (3) physiologic chemistry, (4) bacteriology and pathology, (5) pharmacology and materia medica. The equipment of these laboratories is expensive and each must be in charge of a professor who gives all his time to teaching and research. Moreover, he must have one or more paid assistants, according to the number of students. Large income from endowments or other sources is absolutely necessary; fees alone will not pay the bills. Work in these laboratories should occupy the whole time of every student in the first eighteen months of his course.

The last two years (eighteen months) of the four years' course (thirty-six months) are given, in good institutions, to preventive and curative medicine—clinics, so-called. For this instruction there must be a sufficient hospital, a dispensary, a number of laboratories, clinical teachers and, in Jesse's opinion, much revision of modern methods in America. As to whether the clinical teachers should have a private practice, Jesse states that no man can meet the demands of a large private practice and at the same time give the best instruction in any professional school. Success in practicing a profession comes rather late in life for a man to pick up skill in teaching, and attainment in the technic of an art does not of itself bring ability to instruct others therein. Every medical school should have its principal chairs for clinics filled by men who devote their entire time to teaching and research—men who are not for hire by individuals. They should receive adequate salaries, say from $3,000 to $7,500 a year, according to the value of the man and the costliness of the living in the locality. They should practice in the college hospital of course, but the fees, if there be any, should go to the institution. The hospital, furthermore, should be absolutely under the control of the college. Jesse considers that at least these five cairs, filled in this way, are necessary: (1) surgery, (2) theory and practice of medicine, (3) gynecology, (4) therapeutics and (5) eye, ear, nose and throat surgery.

Revision is needed also in the management of college hospitals. They should accept only, or chiefly, at least, carefully selected patients useful for clinic or research. Only in this way can the best material be obtained for illustration in teaching and for discovery through research. Another false notion, in Jesse's opinion, is that the larger the number of cases the better the clinics, even for undergraduates. Vast clinics and various cases are not necessary for the undergraduate, or even good for him; but rather clinics graded and selected. The undergraduate might spend his summer vacations in larger hospitals, as young engineers spend theirs in field or mine or factory. Moreover, in every state university, at least, the hospital ought to be practically free. In this way it can be made far better, both for teaching and for research.

Another fundamental error found everywhere, he says, is that good clinics are obtainable only in large cities. This notion is far wide of the truth. A hospital of 150 beds, by carefully selecting its patients, can give the best instruction for undergraduates in reasonable number. Every state university in a small town, with a hospital of 150 beds, by accepting without charge cases curable, or incurable, but interesting for illustration or research or both, can have all its beds regularly occupied. It has only to support one good traveling lecturer on hygiene—personal, household and municipal—and to employ one collector of cases in every large city of the state. The collectors (who would not give all their time to this work) might be obtained for $500 a piece annually, and the lecturer for $3,000 or $3,500 with (say) $1,500 more for traveling expenses—about $5,000 a year. What would be the results? The lectures, all free, would illuminate the people and thus promote public health; the physicians of every locality visited might be brought into hearty cooperation with the state university and thus serve as collectors of patients. Jesse points out that state universities, nearly all in small towns, have a rich opportunity through their medical departments, to raise to right notions on this subject the people about them, if only they will go boldly forward toward traveling lecturers, free campus hospitals, selected clinics, investigations into the causes of diseases and right ways of preventing and of ejecting them. Their chief aim should be preventive medicine.

Journal of the South Carolina Medical Association, Charleston

March

27 Cancer of the Face. A. E. Baker, Charleston.
28 Cancer. LeG. Guerry, Columbia.
29 A Plea for the Intravenous Method of Administering Salvarsan. C. W. Barron, Columbia.
30 A Plea for the More Rational and More Energetic Care of the Insane. J. H. McIntosh, Columbia.

Bulletin of the American Academy of Medicine, Easton, Pa.

April

31 *The Hospital and the Young Physician. W. E. Darnall, Atlantic City, N. J.
32 The Economic Influence of the Hospital as Shown on the Profession. W. F. Waugh, Chicago.
33 *Hospital's Recompense to the Staff. T. D. Davis, Pittsburg, Pa.
34 *The Hospital Administration on the Me Vander Veer, Albany, N. Y.
35 *Influe Their Respective Communities. P. V. Pa.

31. Hospital and the Young Physician.—Speaking of the value of hospital training to the recent graduate, Darnall says that it brings him in intimate contact with the best of the profession, enabling him to be started along right paths. The ability to apply practically what he has learned is developed within him, besides a systematic way of doing things, and he learns that not all of medical lore is to be found in printed books or prosy lectures; he sees something of the personal relation between physician and patient, which, sociologically, is a most important thing. If afterward he acquires a position in some hospital it will stimulate him to put forth his best efforts in scientific attainment. If he has ability along any certain line it will give him the opportunity to demonstrate it. The hospital becomes for the young man a finishing school in which the mind is trained to accurate methods and correct reasoning. The daily habit of thoroughness, diagnostic accuracy and the ability to go straight to the point, laying aside the non-essential and unimportant, after a time become habitual. His work is all charted, and is an open book. He must submit to the criticism not only of men of older and richer experience, but also of the younger men with newer methods and even the interns themselves fresh from the laboratories and the schools. It behooves him, therefore, that his work should be of the highest grade and the pride of his reputation cannot afford that it be otherwise. His position demands that he should stand for all that is best and most scientific in medicine. This critical fire to which he is subjected, however, brings out whatever qualities he has and stimulates him to give the best that is within him. The greatest good the hospital does in any community is not so much what it does for the individual as the good it does in sending out men trained to the scientific habit of mind, and whose influence and authority as leaders is reflected in the general diffusion of sanitary knowledge in the community.

33. Hospital's Recompense to the Staff.—In Davis' opinion, the indirect compensation to a doctor on a hospital staff has been greatly exaggerated. If the same amount of time spent in hospital work were spent in study and investigation, and attention to one's office and practice, he thinks that much more benefit would ensue. He says that it is only the small hospitals and some church institutions that do not now pay their physicians for attending patients who occupy private rooms. Of course, the amount of these fees varies much, but it is becoming more and more a recognized principle that the physician laborer is worthy of his hire.

Davis asks whether a hospital patient who is able to pay should not have the choice of his medical attendant, and, also, should hospitals receiving state aid distribute their favors to only a few physicians, or should all have an equal chance? He believes that the answer to these two questions will lead, sooner or later, to the establishing of two kinds of hospitals, the first, a purely eleemosynary institution where none will be treated except those who are unable to pay, and its staff will consist of men who are paid a just salary by the management for their services, in the same manner as hospitals for the insane pay their physicians now. The other kind will be, as it were, invalid hotels, open only to those who will pay according to their accommodations. Such an institution would have no staff, but would be at the service of all reputable physicians. The medical attendants would arrange for their compensation with their patients, just as they would do in private practice. The hospital would make such charges as the manager should see fit for rooms, operating rooms, nurses, etc. Such an institution could restrict its patients to special diseases, or have different departments. It could have private operating rooms to lease to special surgeons. It would supply nurses and such conveniences as a hospital should offer, but private nurses could be employed by any physician. If these two institutions should be housed in one building, the method of paying the medical men would remain exactly the same as if they were in separate buildings. This might be the type for so-called church hospitals. It would prevent hospitals from sailing under the banner of charity, when they are too often simply money-making institutions. It certainly would recompense medical attendants in hospitals, in a much more equitable way than at present. It would also keep from unduly increasing the number and capacity of hospitals and establish them more firmly on a business basis. In many cities the hospital accommodations are very much larger than are required and the expense of maintenance is urged as a reason for not giving proper recompense to the staff.

34. Economic Influence of Hospital Administration on the Medical Profession.—The points which Vander Veer brings out are summarized as follows:

1. Contributions for the construction of the general hospital to be received from those who are disposed to give for such a charitable purpose, thus becoming a partner with the physician in caring for patients who cannot pay for services in their own homes.

2. The care of such contributions, and the organization of the hospital to rest in a board of governors, or trustees, there being a representation on said board from the medical staff of the hospital, the object of this being a close community of interest, at their meetings, and for the discussion of subjects in which they are mutually interested.

3. Appointments on the medical and surgical staff to be made on the recommendation of the staff proper, to be confirmed or rejected by the board of governors.

4. The fee for care of patients in the semiprivate wards or private rooms to be left entirely with the attending physician or surgeon in like manner as though the attention were given in their own homes, hotels or boarding-houses.

5. The semiprivate wards, too, offer an opportunity for the younger members of the medical profession to care for a larger number of patients, when brought to the institution and who are unable to pay for services, than they could elsewhere.

6. Encouragement for every patient who can do so to pay for his board in the public or semiprivate wards, knowing they will receive the attention of the staff of the hospital, or, as is the case in many instances, of the physician or surgeon whom they themselves may select.

7. An opportunity for the public to give to the general hospital such sums as they may feel disposed for making up the deficit that so often occurs in the care of patients who pay all they can and yet are not able to meet the full charge for their expenses. In this manner the self-respect of the patient and friends is maintained, although they still require a little additional aid.

8. A most excellent method for the city to care for its sick and injured and a great protection to the taxpayers.

9. The endowment fund offers an opportunity for the benevolently inclined to place such gifts as he or she may feel disposed to give under the control of an institution that is to be lasting, and where only the interest is to be employed for the annual expenses. Few institutions in this country have endowments sufficiently large whereby the interest will maintain all expenses, and where such do exist only strictly charity cases should be admitted.

35. **Hospitals and Their Respective Communities.**—Eisenberg points out that the influence of a hospital on its surrounding community is beneficial in the broadest sense.

1. The presence of a hospital in any community furnishes prompt attention in all cases of accident or disease, especially to grave and apparently fatal ones, that might otherwise be jeopardized by transmission to some more remote point.

2. The nearness of a hospital arouses more interest and sympathy in its administration and for those cared for in its wards. Especially is this the case when those on the board of management are *selected from the citizens of the immediate community.*

3. The proximity of a hospital with its continual needs of assistance appeals to the benevolent heart of a community and stimulates not only giving but benevolent work for its support.

4. The location of a hospital in any community wherein its presence has created benevolent interest accomplishes much toward effacing the hard-and-fast social and sectarian lines by unifying sentiment in one common purpose.

5. In all populous centers wherein a sufficient number of physicians and surgeons are found willing to support a hospital by their gratuitous services such association with the institution is highly beneficial to that community, because of a better feeling that is thus promoted among the medical staff of the institution.

6. The medical staff of such hospital, because of the accumulation of clinical material of great value, is being constantly trained and educated for better work in the homes of their private patients and, therefore, indirectly the community itself is benefited.

7. The great advance within the past twenty-five years in methods of prevention of disease and of the necessity of more scientific care of the sick and injured has rendered a school for training nurses an essential adjunct to a well managed hospital, therefore such institution, in preparing and furnishing trained nurses for service among the sick in their homes, confers a great benefit on a community.

American Journal of Urology, New York

March

36 Salvarsan in Syphilis. E. Tomasczewski, Berlin.
37 Normal and Pathologic Posterior Urethra and Neck of the Bladder. L. Buerger, New York.

Journal of Ophthalmology and Oto-Laryngology, Chicago

April

38 Management and Treatment of Trachoma Among Indians. W. H. Harrison and D. W. White, U. S. Indian Service.
39 Inter-Relationship Between the Eyes and Nose. J. S. Weaver, Kansas City, Mo.

Chicago Medical Recorder

April

40 *Cystoscopic Findings in Early Tabes Dorsalis. I. S. Koll, Chicago.
41 The Visiting Nurse in the Municipality. W. A. Evans, Chicago.
42 Perforating Gastric Ulcer. H. F. Lewis, Chicago.
43 *Legal Rights and Liabilities of Physicians. J. E. Kehoe, Chicago.
44 *Neuralgia of the Larynx. H. Kahn, Chicago.
45 Scarlatina—Its Prevention and Treatment to Avoid Complications. G. W. Reis, Chicago.

40. **Cystoscopic Findings in Tabes Dorsalis.**—Lateral trabeculæ formation, rigidity of the ureteral orifices and hypertrophy of the interureteric ligament, according to Koll, compose the three important points which should lead to a further investigation directed toward changes in the spinal cord. Symptoms referable to the urinary tract should call for a cystoscopic examination. The bladder picture which is found, *in toto,* differs from any other seen through the cystoscope. The most striking changes are found at the ureteral orifices which, instead of showing the rhythmical, uniform, sphincter-like action with each extrusion, allow the urine to flow out without any evidence of a muscular contraction. To this condition, which he has been unable to find described anywhere, Koll has given the name ureteral-orifice rigidity. In some of the cases this rigidity may not be complete, and thus closely resemble the rigidity of the sluggishly acting pupil. There is a more or less marked hypertrophy of the interureteric ligament manifested by increased vascularization and distention of the arteries; the ridge between the two orifices is distinctly higher and stands out well above the remainder of the mucosa of the bas fond.

A third point to make up the diagnostic triad is the typical trabeculization, or the *balken* of the Germans. This differs from the picture given by an overworked bladder due to obstruction by showing the trabeculæ only on the lateral walls of the bas fond, and apparently continuous with the interureteric ligament at either end. The trabeculæ, too, are finer and more nearly resemble the papillary muscles of the heart. In no case in the class under consideration did Koll see any trabeculæ in the median line, in the fundus or extending high up on the lateral vesical walls.

43. This article appeared in The Journal, April 22, p. 1215.

44. **Neuralgia of the Larynx.**—Kahn reports five cases of non-ulcerative laryngitis dolorosa. He describes laryngeal neuralgia as being a painful non-ulcerative disease of the larynx, characterized clinically by more or less intermittent or constant pain, painful areas, dyspnea, dysphagia, disinclination to talk and fear of approaching death.

Lancet-Clinic, Cincinnati

April 22

46 *Roentgen-Ray Therapy of Enlarged Thymus. S. Lange, Cincinnati.
47 Treatment of Disease. I. O. Allen, Richmond, Ind.
48 The Reason and Purpose of the American Society of Medical Sociology. W. J. Robinson, New York.

46. Abstracted in The Journal, Oct. 29, 1910, p. 1583.

Vermont Medical Monthly, Burlington

April

49 Surgical Treatment of Empyema Without Complicating Apparatus. S. Lloyd, New York.
50 Anaphylaxis. G. S. Graham, Hanover, N. H.
51 Vaginofixation of the Retroverted Uterus in the Cure of Cystocele in Parous Women. C. W. Strobell, Rutland.

Surgery, Gynecology and Obstetrics, Chicago

April

52 The Operative and Specific Treatment of Renal and Vesical Tuberculosis. H. Kümmell, Hamburg-Eppendorf, Germany.
53 Tuberculosis of the Kidney and Ureter. A. D. Bevan, Chicago.
54 Gonococcus Infection of the Kidney. P. I. Nixon, Baltimore.
55 Tuberculosis of the Tubes, Ovaries and Bladder. G. Kolischer, Chicago.
56 *Value of Chromo-Ureteroscopy in Functional Kidney Diagnosis. B. A. Thomas, Philadelphia.
57 Malignant Papillary Adenoma of the Kidney. J. S. Eisenstaedt, Chicago.
58 Congenital Epulides (Odontoblastomata). L. G. Kaempfer, New York.
59 Intermittent Hydrarthrosis. V. C. David, Chicago.
60 The Radiograph Shadow and the Cystoscope. W. F. Braasch, Rochester, Minn.
61 *Ventrosuspension by the Round Ligaments for Backward and Downward Displacement of the Uterus. H. N. Vineberg, New York.
62 *The Closure of the Abdominal Incision. S. E. Tracy, Philadelphia.
63 Acute Postoperative Dilatation of the Stomach Following Gastrojejunostomy. M. R. Barker, Chicago.
64 Treatment of Eclampsia. L. F. Watson, Oklahoma City, Okla.

56. **Chromo-Ureteroscopy.**—Conclusions as to the functional sufficiency or insufficiency of a kidney, based merely on the onset of the elimination of indigocarmin, Thomas says, may be erroneous. The intensity of the color reaction must also receive serious consideration. Therefore, the first law of the chromo-ureteroscopist is to obtain and maintain an absolutely clear fluid content in the bladder. The second law is to have a sufficiently brilliant illumination. If these two conditions are not secured, he will frequently fail to observe the earliest

onset of the elimination of the indigo, particularly if it is a light blue coloration and merely oozes from the ureteral orifices into the bladder, instead of exhibiting the normal spurt. The first law can be best fulfilled by prolonged irrigation, if indicated, and the employment of an evacuation cystoscope, so that the bladder may be emptied quickly and refilled when necessary. The second law is not so difficult, requiring simply care in the selection of a good cystoscope and the testing of the lamp before introduction into the bladder.

Chromo-ureteroscopy based on the employment of indigocarmin is regarded by Thomas as the most valuable single test for renal sufficiency or insufficiency. The test is said to be particularly applicable for surgical affections of the kidneys and ureters and almost invariably suffices to establish the diagnosis, if, when the indication arises, it be supplemented by ureteral catheterization. It is of no value in movable kidney in the absence of a ureteral kink or hydronephrosis, pyelitis, early tuberculous and certain other forms of nephritis and small tumors not involving a majority of the parenchyma. It is of value in the differential diagnosis of hemorrhagic and chronic interstitial nephritis from other types of the disease. Supplemented by ureteral catheterization, and the Roentgen ray, it will serve to diagnose practically every case of renal and ureteral calculus. In hydronephrosis, pyonephrosis, pyelonephritis and chronic tuberculosis of the kidney involving approximately one-third of the parenchyma, chromo-ureteroscopy is of exceptional merit. In simple hypertrophy or carcinoma of the prostate, causing chronic retention of the urine, the indigocarmin test promises to be of value in the differentiation of operable and non-operable cases.

Chromo-ureteroscopy is also of great value in the differential diagnosis of obscure abdominal tumors, also in facilitating difficult ureteral catheterization. Indigocarmin is eliminated from normal kidneys as a dark blue in from 4½ to 20 minutes; as a light blue, not later than 15 minutes. In 86.7 per cent. of normal kidneys it appears either as dark or light blue in from 4½ to 15 minutes. If the indigo does not appear at the expiration of from 15 to 20 minutes, it is evidence of serious insufficiency of the renal function. If the elimination of the dye does not occur at all, the kidney or ureter is gravely diseased. The intensity of the color reaction (dark blue or light blue) depends on the concentration of the urine and the individual secretory power of the organ. A surgically diseased kidney eliminates the dye less intensely than its normal sister organ, or not at all. The test is very simple and by alternate observation of the two ureteral orifices, differences between the two kidneys are readily and speedily noted.

61. **Ventrosuspension in Displacement of Uterus.**—In Vineberg's method, four sutures are used to suspend the uterus by means of the tubes, two on either side. One suture passes around the tube 4 cm. from the uterus, the other at its insertion into the uterus. The sutures pass through the rectus muscle and fascia and are tied on the fascia. The wound is closed in the usual manner.

62. **The Closure of the Abdominal Incision.**—Overlapping of the cut edges of the rectus fascia is the end aimed at by Tracy. The peritoneum is sutured with catgut, and the same suture is used to whip together the muscle. On the right side of the wound, the fascia is separated back from the muscle, for from 1 to 3 cm.; likewise on the left side. Tension sutures are then introduced through the skin about 3 cm. from the edge of the wound, passing through the fat and the fascia about 1 cm. from the edge, then in and out through the fascia on the left side from 1 cm. to 3 cm. from the edge, and back through the fascia on the right side, then out through the fat and skin on the left side. The sutures are placed from 4 to 5 cm. apart. Next the edge of the overlapping fascia is whipped down with chromic catgut, and the skin sutured with a buttonhole stitch. If the ends of the tension sutures are drawn taut, the fascia will overlap, and the whipping down of the edge will be facilitated. Gauze saturated with 70 per cent. alcohol is placed over the wound and the tension sutures are tied over the gauze. The tension sutures are removed in from ten to fourteen days.

In patients in whom there is a wide separation of the recti muscles and marked relaxation of the abdominal wall, the fascia is overlapped to the extent the recti muscles are separated. In cases of marked relaxation, the recti muscles are dissected out and sutured from an inch above the umbilicus to the pubic bone. It is not considered advisable to constrict the upper abdomen as such a procedure has a tendency to increase the visceroptosis, which is usually present. If the peritoneal cavity is opened when separating tissues about the umbilicus, the peritoneum is sutured transversely as there is less tension and the approximation is better. After the recti muscles are sutured, the edge of the fascia on the left side, which is slid under the fascia on the right side, to the extent the muscles were retracted, is anchored with mattress sutures of chromic gut, and the edge of the fascia from the right side is sutured in the usual way. In order to make a good approximation and to avoid any infolding of the fascia at the upper end of the wound, this fascia on the right side is cut transversely, and the vertical incision carried slightly upward, and to the left. The upper segment (above the transverse cut) is then slid under and the lower segment over the fascia on the left side. The free edge of the fascia is then sutured. When it is necessary to leave one end of the wound open for drainage, the same technic is employed, except that no gauze is interposed between the skin and the tension sutures. By employing this method the separation of the fascia in the part of the wound not closed is less, and the abdominal wall is stronger than if closed by through-and-through sutures; dead spaces are eliminated; the fascia is overlapped and approximated accurately and remains overlapped even if the catgut is absorbed in a few days. No dead space is left in the fat and the necessity of suturing this layer is eliminated. In cases in which there is an excess of serum or slight oozing in the skin or fat immediately after the operation, the pressure from the tension sutures tied over the gauze will force the serum or blood through the skin incision, where it will be taken up by the gauze. If primary union of the wound takes place, it is practically impossible for a hernia to follow, and if the technic is proper, suppuration will seldom result.

Northwest Medicine, Seattle, Wash.

April

65 Neurasthenia Gastrica, or the Nervous Dyspepsia of Leube. A. A. Robinson, Ogden, Utah.
66 The Principles of Chemotherapy, and the Relation of the Wassermann Reaction to Syphilis. R. W. Matson, Portland, Ore.
67 Laboratory Methods in Diagnosis of Syphilis. C. Snow, Salt Lake City, Utah.
68 Salvarsan, Its Place in Medicine To-Day and in the Future. G. S. Peterkin, Seattle, Wash.
69 Significance of Jaundice in Gall-Stone Disease. F. Hinman, Spokane, Wash.
70 Origin of the Various Constituents Found in Urinary Calculi. G. S. Gordon, Vancouver, B. C.

Therapeutic Gazette, Detroit

April

71 Diseases of the Skin. J. W. Miller, Cincinnati.
72 Results of Gall-Stones. J. A. McGlinn, Philadelphia.
73 Exostoses of the Os Calcis. A. J. Davidson, Philadelphia.
74 Puerperal Infection. E. P. Davis, Philadelphia.
75 *A Modified Vaccine Therapy Based on the Theory of Multiple Infections and Quantitative Reaction. A. F. Schafer, Bakersfield, Cal.

75. **A Modified Vaccine Therapy.**—The vaccines used by Schafer are neither "bacterial vaccines" nor "serums" as ordinarily understood, but are solutions in sterile water (to which approximately 0.5 per cent. phenol has been added) of the soluble substances generated by the organisms when grown in suitable culture media. The product is sterile and contains neither live nor dead bacteria, all organisms having been removed by filtration through porcelain. The "mixed-infection vaccine," which is used in the treatment of infections of any character whatever (except where the diagnosis has been clearly established and the predominating causative organism is known) is made from a large variety of pathogenic bacteria. This is a polyvalent preparation, since the organisms are not confined to any one strain of a given species. Two

hundred patients ill with pneumonia have been treated with the special pneumococcus vaccine. A series of fifty-six patients with lobar pneumonia treated with the special vaccine without a single death included two infants, seven children whose ages varied from two to eleven years, eight adults who were chronic alcoholics (three of whom had delirium tremens), sixteen complicated with measles, three with peritonitis, three with virulent peripheral lesions; two obstetric patients; five with typhoid infection, six with double lobar pneumonia, and fourteen individuals over 60 years of age, one being 92. One hundred and fifty patients with typhoid were treated, and of these four died, two from perforation and one from hemorrhage. The average time from the treatment to recovery was ten days. Good results were obtained in several cases of acute articular rheumatism. Considerable improvement followed the use of tuberculosis vaccine in a series of ten cases exhibiting a variety of tuberculous lesions. In gonorrheal infections the results were such that definite conclusions are unwarrantable.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

April 15

76 Brain Tumors. H. W. Jones, Minneapolis.
77 Practical Use of Tuberculin in Diagnosis. G. E. Brown, Brainerd.
78 Two Cases of Conservative Amputation. J. H. Rishmiller, Minneapolis.
79 A Plan for the Establishment of Local Routine Epidemiologic Work in Minnesota. H. W. Hill, Minneapolis.
80 Evil Effects of Small Adenoids. C. F. Coulter, Wadena.

Archives of Pediatrics, New York

April

81 Diarrhea in Children, with Especial Reference to Pods of Cesalpinia Corriaria (Divi-divi) as a Drug, and to Banana Flour and Plantain Meal as a Food. A. E. Vipond, Montreal, *Canada*.
82 Value of Prophylaxis in the Early Life of the Exceptional Child. S. V. Haas, New York.
83 A Record of the First 500 Cases Cared for at the Nathan Straus Infants' Milk Depots of Washington, D. C. L. Tayler-Jones, Washington, D. C.
84 Malarial Fever in Children. E. G. Wherry, Newark, N. J.
85 Tuberculous Peritonitis in Children, With Report of Cure Following Two Operations in a Dry Non-Exudative Form of the Disease. J. H. Bradshaw, Orange, N. J.
86 Infant Mortality in Summer: How to Conduct a Successful Campaign Against It. A. Stern, Elizabeth, N. J.
87 *Treatment of Typhoid with Special Reference to the Use of Hydrochloric Acid. A. McAlister, Camden, N. J.

87. **Hydrochloric Acid in Typhoid.**—It is McAlister's uniform practice to use the acid in every case just as soon as the alimentary tract has been well prepared for systematic feeding by the use of eliminatives, preferably broken doses of calomel followed by a saline or castor oil. He gives the acid well diluted, in doses ranging from 2 to 15 minims, according to age and the needs of the individual case, three or four times a day. Pepsin may be added when it seems especially indicated, particularly in the very young or very delicate, and the mixture may be made especially palatable by giving it in the form of an artificial gastric juice. This McAlister regards as being the ideal mixture for pediatric use. The treatment calls for water, both for pleasant administration of the acid and to satisfy the thirst it tends to excite. This in itself is a noteworthy advantage in the treatment of this particular febrile condition in which patients almost never, without special and constant urging, imbibe enough water. But the greater value of the acid lies in its effect on gastric digestion and the tone of the digestive processes generally. He urges more extensive use of this treatment.

Ohio State Medical Journal, Columbus

April

88 Treatment of Hip Disease as Based on its Pathologic Mechanics. H. O. Feiss, Cleveland.
89 The Fergus Advancement Operation for Ptosis. E. Lauder, Cleveland.
90 The Facial Expression and Posture of Disease. S. Loving, Columbus.
91 Tracheobronchoscopy. S. Iglauer, Cincinnati.
92 Diagnosis and Treatment of Puerperal Sapremia and Septicemia. F. Fletcher, Columbus.
93 Review of the Theories of Etiology of Cancer. R. L. Bidwell, Toledo.
94 Treatment of Carcinoma and Sarcoma. H. M. Freeman, Toledo.
95 Further Reasons Why a Natural History is Needed in Ohio. O. V. Huffman, Cincinnati.

Medical Record, New York

April 22

96 Present Day Health Activities. W. Wyman, Washington, D. C.
97 Treatment of Epithelioma, Lupus, etc., with Thorium Paste. L. D. Bulkley, New York.
98 Teaching School Hygiene. J. Burnet, Edinburgh, Scotland.
99 *Serotherapy of Pneumonia in Infants and Young Children. E. M. Sill, New York.
100 *Treatment of Diabetes Mellitus, with Table of Carbohydrate Equivalents. H. S. Carter, New York.
101 *Spontaneous Disappearance of Malignant Growths. J. W. Gleitsmann, New York.
102 Diagnosis of Duodenal Ulcer. M. Gross, New York.
103 Reactions to Tuberculin. L. C. Rouglin, Atlanta, Ga.

April 29

104 *Pulmonary Symptoms as Premonitory Signs of Venous Thrombosis. L. A. Conner, New York.
105 Street Sanitation in New York. W. Van V. Hayes, New York.
106 *A Case of Multiple Myeloma with Albumosuria. C. K. Austin, Paris, France.
107 Drugs in Gastric Therapeutics. J. W. Weinstein, New York.
108 Significance of a History of Alcoholic Addiction. T. D. Crothers, Hartford, Conn.
109 Short Talks with My Students and Others: Being Random Suggestions for the Younger Practitioners. R. H. M. Dawbarn, New York.

99. **Serotherapy of Pneumonia in Infants.**—About a year ago Sill became interested in a polyvalent composite serum obtained from diphtheria-immune horses for use in pneumonia. The serum was injected subcutaneously, in doses of 10 c.c., at varying intervals, depending on the symptoms and the effect it had on the patient. In some cases one injection seemed to be sufficient to relieve the symptoms and check the disease, while in others repeated injections of 10 c.c. were given every day or at longer intervals, although not always with favorable results. Sill thinks that, perhaps, in these latter cases, if larger doses had been given or the serum had been injected at more frequent intervals, it might have made a difference and given a more immediately favorable result. In all, twelve patients were treated by means of the serum, eight males and four females. Their ages ranged from 5 months to 3 years; all but two were under 2 years, and three of these were under 1 year. There were three cases of lobar pneumonia and nine cases of bronchopneumonia. Two patients died, one of empyema and one of extensive double pneumonia, marasmus and cardiac failure (mortality 16.6 per cent.). Two other patients besides those who died were not helped by the serum, but the other eight were all more or less improved and in some of the pacients the effect of the serum seemed marked. Those patients who received the serum early in the disease seemed to be most benefited by its use.

100. **Treatment of Diabetes Mellitus.**—Carter calls attention to the fact that the only real success comes through a proper dietary regulation, and as the chief symptom, glycosuria, is dependent on the incomplete metabolism of carbohydrates, any plan for efficient treatment must center about the proper training of the organism to reacquire, to some extent, the lost power of properly burning the carbohydrates. In other words, it is the partial re-education of the individual to the proper digestion of starch and the sugars, a power which has been lost through some defect in the physical economy of the secretions, notably the pancreatic internal secretion.

101. **Spontaneous Disappearance of Malignant Growths.**—Attention is directed by Gleitsman to the fact that this phenomenon does occur, and he urges that the subject be made one of more intensive study.

104. **Venous Thrombosis.**—The chief points to which attention is called by Conner are the following: Pulmonary symptoms are, not infrequently, the first indication of a beginning venous thrombosis, preceding often by several days the local evidences of such thrombosis. Such symptoms are the result of the lodgment in branches of the pulmonary artery of emboli derived from the newly formed, friable thrombi in the peripheral veins. These early pulmonary emboli are usually of small size and the symptoms arising from them are frequently slight and transient. The symptoms of pulmonary embolism and infarction by no means always correspond to the classical descriptions of them. One or more of the cardinal symptoms are frequently lacking. This is especially true of hemoptysis, which is often absent entirely, and at other times appears only several days after the onset of the other symptoms. The physical signs are usually either those of a more or less extensive plastic pleurisy or of a small area of

pneumonic consolidation which lasts only for three or four days. Venous phlebitis and thrombosis, in very many instances, begins in the small peripheral veins, especially in those of the calf, where it may exist for some days before the symptoms of thrombosis of the large veins appear. The chances of pulmonary embolism seem to be much greater at the beginning of a venous thrombosis than later on in its course. Some of the obscure chills in typhoid, Conner says, are related to the lodgment of pulmonary emboli. He cites nine cases to illustrate the points made by him.

106. **Case of Multiple Myeloma.**—The disease that carried off Austin's patient was a myeloma, that is to say, a tumor of the bone-marrow, whose point of departure was in the substance of the twelfth dorsal vertebra, which collapsed through total disappearance of its bony substance. There were metastatic nuclei in the neighboring vertebræ, and in the ribs. This myeloma was characterized by the predominance of lymphocytes. The lymphnodes had undergone a form of atrophy, and a radical change of structure such as is sometimes observed in anemia. There were evident traces of old and healed tuberculosis of the lungs. There were likewise traces of former inflammation of the pleuræ and peritoneum, which was no doubt also tuberculous. It was to this inflammation that the renal lesions appeared to have been due. The points in this case that seem to be of particular interest are the following: A long period of preliminary silence, which probably covered the entire winter. The period of increasing pains, lasting three months, ending in a big crisis, and followed by six months of uninterrupted improvement resulting in a condition that the patient considered practically a normal one. The apparently favorable action of the atoxyl treatment; the fact that with a whole vertebra entirely destroyed, and without the slightest artificial support, the patient suffered no inconveniences whatever from this pseudoarthrosis, while at no time were there paralytic symptoms of any sort.

Journal of the Oklahoma State Medical Association, Muskogee

April

110 The Repair of Fracture. J. H. Scott, Shawnee.
111 Antityphoid Vaccination. J. W. Riley, Oklahoma City.
112 Tuberculosis of the Fallopian Tube. C. N. Ballard, Oklahoma City.
113 Duty of the Physician to Himself. L. H. Huffman, Hobart.
114 Electricity and the Nervous System. T. A. Williams, Washington, D. C.
115 Lacerated Cervix-Uteri. J. H. Hansen, Grandfield.
116 Pyloric Obstruction Due to Extrinsic Causes. G. A. Beedle, Kansas City, Mo.

Boston Medical and Surgical Journal

April 27

117 Men, Manners and Medicine. R. M. Green, Boston.
118 *Climatic Treatment of Tuberculosis. G. Hinsdale, Hot Springs, Va.
119 *Common Colds. J. A. Honeij, Boston.
120 Analysis of Forty-six Cases of Prostatectomy. L. Davis, Boston.
121 Pemphigus Chronicus Vulgaris of the Oral Cavity and Larynx. R. A. Coffin, Boston.
122 Acute Toxemia Caused by Infection of the Throat by the Colon Bacillus. C. B. Faunce, Jr., Boston.

118. **Climatic Treatment of Tuberculosis.**—Hinsdale is firm in the belief that for the majority of incipient cases, when the patient can well afford it, life in a selected locality in the west offers the best prospect of cure; but that for eastern patients a period of training in an eastern sanatorium is highly desirable—the first and most important stage in beginning any climatic treatment. He believes that dryness, sunshine and altitude are features of the best climate, but that they decidedly disagree with some patients when presented in extreme doses as in some of our southwestern resorts. Hinsdale agrees with others that given simple pulmonary tuberculosis (not far advanced), somewhat over 60 per cent. of such patients will do better and live longer in the West than they would in the East, supposing every other consideration to be equal; also that nearly 40 per cent. of the total will do better and live longer in the East than in the West, similar conditions prevailing in both places. Of course those comprising this latter 40 per cent. in the East may not do quite so well proportionately as those of the 60 per cent. in the West, but in the East they will be doing the best that they can, and a small majority of the 40 per cent. can be cured under eastern conditions that would probably fail utterly in the West. In other words, conditions other than money, nostalgia, etc., should enter into the question of cases of tuberculosis being treated and remaining West or East. Doubtless every patient who is able to afford it easily should try the West; the first and essential part of the western trial being a period of regulated régime in the East.

119. **Common Colds.**—This is a statistical paper. Honeij details the results of an investigation of the prevalence of common colds and the economic loss due to them, together with a study of the various types of colds, sources of infection, the vocations most affected and other facts of more or less interest and importance.

Virginia Medical Semi-Monthly, Richmond

April 7

123 Diagnosis and Treatment of Tumors of the Breast. J. S. Horsley, Richmond.
124 Late Methods in the Diagnosis and Treatment of Gastric Diseases. J. R. Verbrycke, Jr., Washington, D. C.
125 Hydronephrosis. K. Ruflin and L. Gwathmey, Norfolk, Va.
126 Some Interesting Mastoid Cases. J. R. Winslow, Baltimore.
127 *Appendicitis—Review of 130 Operative Cases.* W. L. Peple, Richmond.
128 Treatment of Advanced Cases of Appendicials. J. N. Lewis, Roanoke.

Long Island Medical Journal, Brooklyn, N. Y.

April

129 Status of the Radical Mastoid Operation for Cure of Chronic Suppurative Otitis Media. W. C. Braislin, Brooklyn, N. Y.
130 Salvarsan. J. M. Winfield, Brooklyn, N. Y.
131 Correction of Paralytic Deformities in Young Adults. W. Truslow, Brooklyn, N. Y.
132 Treatment of Movable Kidney. T. B. Spence, Brooklyn, N. Y.
133 Some Pelvic Pathology and Reflexes. R. T. Morris, New York.

Medical Fortnightly, St. Louis

April 10

134 Aphonia. L. D. Brose, Evansville, Ind.
135 Supplying Anatomic Material. G. H. Bogart, Brookville, Ind.
136 Personal Experience with Specific Vaccines. E. E. Clark, Danville, Ill.
137 Important Difference Between the Opsonic Negative Phase and the Clinical Negative Phase in Bacterial Therapy. F. E. Stewart, Philadelphia.

Annals of Ophthalmology, St. Louis

April

138 The Chemistry of Metabolism in its Relation to Eye Disease. S. L. Ziegler, Philadelphia.
139 Relation of Cerebral Decompression to the Relief of the Ocular Manifestations of Increased Intracranial Tension. G. E. de Schweinitz, Philadelphia.
140 Ocular Complications of the Acute Exanthemata. J. M. Griscom, Philadelphia.
141 Vaccine Therapy and Serotherapy in Disease. W. Zentmayer, Philadelphia.
142 Restoration of Contracted Sockets After Enucleation of the Eyeball—*Advantages of Thiersch's Skin Graft Over Other* Methods of Treatment. V. L. Raia, Providence, R. I.
143 A Modified Pterygium Operation. P. B. Wing, Tacoma, Wash.
144 Ocular Symptoms of Infantile Scurvy. J. H. Dewey, Philadelphia.
145 Elephantiasis of the Eyelids. W. B. Weidler, New York.
146 Papilloma of the Conjunctiva. F. Krauss, Philadelphia.
147 Gumma of the Brain, with Absolute Blindness and Complete Recovery. E. O. Winship, New London, Conn.
148 Vertical Imbalance (Hyperphoria and Hypophoria) and the Value of the Vertical Prism in Ophthalmic Practice. W. Reber, Philadelphia.
149 An Improved Astigmatic Axis Finder. E. B. Coburn, New York.
150 The Scientific Versus Method by Rule, for Converting Cross Cylinders into Compound Lenses. W. C. Langhorst, Aurora, Ill.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

April 15

1 Arteriosclerosis and the Kidneys (to be continued). Sir C. Allbutt.
2 *Heart Failure. J. Mackenzie.
3 *Surgical Treatment of Chronic Colitis. D. Power.
4 *Vaccines in Acute Mastitis. T. H. C. Benians.
5 *Erythema Nodosum Following Measles. E. P. Joynt.
6 *The Value of Surgical Treatment of Pulmonary Cavities. J. D. Harris.
7 Scopolamin-Morphin Anesthesia in Labor. D. Corbett.
8 Evidence of Recent Severe Illness Afforded by the Nails. N. Flower and Sir S. Wilks.

2. **Heart Failure.**—The point is emphasized by Mackenzie that an individual affected by a heart lesion which diminishes

his working force must live within the limits of his powers. This can only be done by the period of rest being sufficient to restore the exhaustion of the work force. In this way alone will heart failure be avoided, and a reasonable prospect of longevity be attained. Treatment need not be given in the presence of any abnormal conditions unless there is distinct evidence of heart exhaustion. Where there is such evidence, then the treatment, in the first place, must consider the possibility of diminishing the amount of daily effort. From the point of view that heart failure arises because the period of work is so great that the period of rest cannot restore a sufficient amount of work force, the essential principle of treatment becomes self-evident—namely, rest. The success of the treatment depends entirely on the amount of rest the heart has procured. Mackenzie thinks it probable that drugs which have such a potent and beneficial effect on the heart as those of the digitalis group owe their good effects mainly to the amount of rest procured by the slowing of the heart's rate. At all events, in the researches Mackenzie has been carrying on for some years, the patients who have obtained the greatest benefit from digitalis were those in whom the heart's rate was decreased by the digitalis. He has repeatedly seen relapse of patients coincide with an increase in the pulse-rate when the digitalis was diminished or left off.

The vast majority of patients in whom digitalis acts with such marvelous effect in slowing the rate and improving the condition are those affected by auricular fibrillation. Hearts with the normal rhythm are seldom so sensitive to digitalis, and in them there is not the same tendency to slowing of the rate. Mackenzie says that it is a matter of every-day experience to find individuals with a murmur or an irregularity, who for years have been subjected to treatment and made to visit health resorts, for a condition which neither indicates heart failure in the present nor its likelihood in the future. The fact that heart failure did not arise has probably been attributed to the precautionary measures. From this comes the belief in the efficacy of many of the drugs and methods in use to-day. When many of the vaunted remedies are carefully investigated, their uselessness becomes evident. There are many conditions in which rest alone fails to benefit the heart, as when the heart is invaded by a toxin, or rendered irritable from some lesion in the organ itself, or when the ventricle in heart-block contracts so seldom as to endanger life. For these and many other conditions, we are absolutely without any means of meeting the impending and actual danger, and yet we are kept in ignorance of this fact because writers pour forth a stream of remedies for any and every kind of heart trouble. Were we more alive to our own limitations, we should be more industrious in the search for real and valuable remedies.

3. **Chronic Colitis.**—Appendicostomy is favored by Power in these cases of ulcerative colitis. The products of the ulceration are very abundant, and their absorption is one of the most serious dangers of the disease. It is important, therefore, to cleanse the bowel and to keep it free from putrefying products. Drainage through the appendix enables this to be done in the most satisfactory manner. The operation of appendicostomy is not so serious as that required for removal of the appendix during the quiet stage. It is very effective, and the fistula can afterward be closed without trouble; indeed, in some cases the difficulty is to prevent spontaneous closure. On the other hand, Power emphasizes that it must be clearly understood that appendicostomy will not cure ulcerative colitis, and the friends of the patient should have this clearly explained to them at the time of the operation, or they will be disappointed. The object of the operation is to keep the bowel clean and to prevent the absorption of toxic products. The ulcerative process continues until the patient becomes immune either by a natural process or by artificial means. Appendicostomy, therefore, prolongs the life of the patient, and thus gives him a better opportunity to be cured.

In the cases which have come under Power's observation (ten) the first effect of appendicostomy has been a material improvement in the condition of the patient, even in the most advanced cases. The temperature falls, the appetite returns and may remain good permanently. The improvement in the general condition, however, is not maintained in its full extent, and a relapse occurs after a week or two. These relapses are a cause of great anxiety, but, so far as he has seen them, they have only been temporary, and the net result of the operation has been a slow but interrupted progress to recovery after months of illness. Power has tried many different drugs as local applications in these difficult cases of ulcerative colitis. Phenol in all its forms, however disguised, has caused carboluria so often that he has ceased to use it. Bismuth salicylate, perchlorid of mercury, biniodid of mercury and boric acid caused irritation in the earlier stages and were discontinued. Bismuth carbonate (15 grains to 1 pint) and potassium permanganate (1 in 30,000) were some of the drugs which proved most useful and were soothing. In the later stages of the disease irrigation with perchlorid of mercury (1 in 20,000), zinc sulphate (4 drams to 3 pints) and silver nitrate in the strength of 5 to 10 grains to the pint of sterilized water gave the best results when they were used alternately. Ionized irrigations were employed on several occasions, but he could not satisfy himself that there were any marked improvements.

4. **Vaccines in Acute Mastitis.**—Benian cites a considerable number of cases of acute mastitis and chronic suppurating sinuses of the breast in which the vaccine treatment was eminently successful.

5. **Erythema Nodosum Following Measles.**—In 9 out of 300 cases of measles erythema nodosum developed. In most of the cases about ten to fourteen days had elapsed since the first onset of measles before the erythema nodosum made its appearance. In half the cases the first symptom was pain in the joints, followed by the erythema in about twenty-four hours. There was no history of rheumatism or contact with rheumatic fever in any of the cases, and no rheumatic or cardiac lesions were found in any of the patients. The question of sore throat before or at the time of the measles rash was carefully gone into by Joynt, but it was present in one case only. So far as he knows no other case of erythema nodosum has occurred in the sphere from which these cases have been collected. Seven of the cases occurred among the poorer class attending the hospital, and two were private patients in fairly good circumstances.

6. **Surgical Treatment of Pulmonary Cavities.**—Harris reports another case (his second) in which opening a pulmonary cavity and treating it surgically seemed indicated. He regards the procedure as being useful and fairly safe in non-tuberculous cases in which the cavities are but few in number. The result was all that could be desired. This case presented one or two special points of interest. Thus there were no adhesions found strong enough to prevent the lung from retracting from the wound. Neither was there anything to guide the palpating finger to the dilated bronchus. Again, the movements of respiration, so much exaggerated anteriorly as compared to the movements of the ribs posteriorly, repeatedly pulled out the tube from the bronchiectasis, for although the latter was carefully mapped out prior to operating, as soon as air entered the pleura the bronchiectasis was drawn upward and toward the mediastinum. The operation was therefore divided into three stages. When efficient drainage of the bronchiectasis was established, the temperature fell to normal, and remained so with cessation of all sweatings. Lastly, the collapsed lung and injured pleural cavity were subjected to Roentgen rays for twenty minutes on four occasions.

Lancet, London

April 15

9 *Heart Failure. J. Mackenzie.
10 *Indications for and Technic of Cesarean Section. A. Routh.
11 *Nature of the Skeleton Changes in Acromegaly. A. Keith.
12 *A House Epidemic of Typhoid Fever Due to a Carrier of an Atypical B. Typhosus. W. J. Wilson and J. A. Sinton.
13 Three Hundred Cases of General Anesthesia Combined with Narcotics. G. Brown.
14 *Prolapsus Uteri: Ventrofixation. J. O'Conor.
15 Common Forms of Deafness. W. H. Kelson.
16 An Improved Drainage Tube for Suprapubic Cystotomy, Liver Abscess and Abdominal Cysts. L. McGavin.

9. Also published in the *British Medical Journal*, April 15, 1911.

10. Also published in the *Journal of Obstetrics and Gynecology of the British Empire*, February, 1911.

11. **Skeleton Changes in Acromegaly.**—After having examined a considerable number of skulls, Keith concludes that the changes in acromegaly are of the nature of true growth, and are apparently due to the circulation through the body of a substance formed in the pituitary. This substance seems only to sensitize the tissues, the actual cause of their growth being mechanical stimuli arising from muscular action and mechanical movement. The growth changes seen in the acromegalic are of the same nature as those which occur normally in anthropoids and in the Neanderthal race, and both are probably due to a condition of hyperpituitarism.

12. **A House Epidemic of Typhoid.**—A house epidemic consisting of seven cases of typhoid is reported by Wilson and Sinton. The first patient was the mother who had eaten cockles a fortnight before her illness and who became a bacillus-carrier. The infecting bacillus was at first immotile when grown on agar, and was somewhat inagglutinable. The mother gave birth to a healthy full-term child, and her milk was very rich in agglutinins.

14. **Prolapsus Uteri: Ventrofixation.**—As experience has tended to prove that permanent reliance cannot be placed on any method of suturing the fundus, O'Connor adopted the following procedure with, so far, most promising results. The abdomen having been opened by a low central incision, the uterus is drawn forward with the left hand, and a small transverse cut is made at the site of the reflection of the peritoneum on the anterior surface of the uterus (exactly similar to the preliminary peritoneal incision in hysterectomy). With the handle of a knife or with the right index finger, the peritoneum with the bladder is pushed downward and forward, until a space of about an inch square is left on the anterior surface of the cervix. The peritoneum on each side of the exposed area is seized with pressure forceps, and is retracted out of the way, while he passes three strong catgut sutures, about one-third of an inch apart, through the denuded surface of the cervix, deep enough to get a firm grip of the cervical muscular coat. The needles having been removed, he draws the ends out, respectively, on each side through the recti muscles, by the aid of Childe's ligature forceps. Thus the peritoneum is excluded, and the exposed cervical connective tissue is brought into direct apposition with the recti. Before tying these three fixation sutures, O'Connor always closes the peritoneal layer of the parietal wound by a continuous catgut suture, the first few loops of which he passes also through the uterine peritoneum just above the denuded area, in order that no raw surface may be left for the omentum or the intestine to adhere to. The three cervix-recti sutures are next tied, and the muscles are approximated through the remainder of the incision by another catgut suture, the rectus sheath is similarly closed, and the skin is united by a subcuticular silk thread.

Clinical Journal, London

April 5

17 *Dyspnea in Nephritis and Diabetes Mellitus. N. Tirard.
18 Acute Intussusception. E. S. Bishop.

April 12

19 *A Fatal Case of Acute Suffocative Catarrh of Pneumococcal Origin (Pneumococcus Bronchitis). A Second Case of Pneumococcus Bronchitis (Unilateral) of Long Duration and Not Fatal, with Other Analogous Cases and Remarks. S. West.
20 Mixed Morbid Conditions in the Chest. J. W. Carr.
21 Acute Bronchial Affections in Young Children. T. D. Lester.

17. **Dyspnea in Nephritis and Diabetes.**—Urgent dyspnea, Tirard says, is always of grave import in nephritis and diabetes. In nephritis, when dyspnea is found, one must determine the cause, and to which of these categories of dyspnea the case belongs. It is essential for the purpose of treatment. The treatment should be hot-air baths and purgatives. Diaphoretics may do good in one group, and in another group it may be necessary to withdraw the fluid from the legs, the abdomen and the chest. In yet another group of cases, success may be obtained by stimulants and by expectorants. In diabetes, when dyspnea develops, one must examine the chest very closely for evidence of tuberculosis or other pulmonary trouble, and must also examine the urine closely for evidence of acetone or diacetic acid, remembering that this may be present even when, or particularly when, the sugar has shown signs of diminishing. *When the sugar diminishes and dyspnea is worse, it is almost always certain* that acetone or oxybutyric acid or diacetic acid will be present. Another practical conclusion is that when this symptom of air-hunger develops in patients who are not known to be diabetic, or who are known not to be diabetic, or when *there is marked apathy or drowsiness in patients who are being* fed by the rectum, it is advisable to examine for acetone and diacetic acid, and when these substances are present, whether one is dealing with diabetics or non-diabetics, it is always a safe rule to give alkalies and carbohydrates.

19. ***Acute Suffocative Catarrh of Pneumococcal Origin.***—West regards the association of bronchitis with pneumonia as being always serious, but the gravity depends on the relation between them. Pneumonia occurring in the course of an ordinary bronchitis is an awkward complication, but not necessarily fatal. If, however, the signs of bronchitis develop in the course of a pneumonia, the result is almost invariably fatal. The meaning of the bronchitis in the two cases is different. In the first it is merely an association of two independent diseases. In the second the bronchitis is a sign of pulmonary failure, the result of the strain thrown on the lungs by the pneumonia; the lungs having done all they could to cope with the pneumonia, but failed, the signs of the failure being those of bronchitis. *This is sometimes called secondary congestion of the lung.* But the congestion of the lung may be primary. It may be coincident with the onset of pneumonia, and produce very grave symptoms. It may even be associated with hemoptysis, which is sometimes considerable. Yet as the consolidation develops in some part of the lungs, the primary general congestion may subside and the physical signs gradually limit themselves to those of ordinary consolidation. This may be compared to the widespread initial swelling which occurs in the subcutaneous tissue precedent to the development of a boil, and which rapidly disappears as soon as the infection localizes itself. If, when the pneumonia localizes itself, this general congestion still continues, it constitutes a very grave complication. This general congestion, bronchial as well as pulmonary, may also exist independently of any, or of anything but slight, consolidation. It is then a condition of the greatest gravity.

Medical Press and Circular, London

March 29

22 *Rheumatic Manifestations in Childhood. R. O. Moon.
23 Congenital Cystic Kidney. K. E. L. G. Gunn.
24 The Senile Heart: Prognosis and Treatment. J. Hay.
25 Primary Pneumococcus Peritonitis. T. G. Moorhead.
26 A Case of Acute Visceral Syphilis. T. Bushby.

April 12

27 Salvarsan in Syphilis. S. Taylor and R. W. Mackenna.
28 *A Case of Anomalous Cutaneous Eruption. W. K. Wills.
29 Paratyphoid Fever. G. Peacocke.
30 Fractures of the Patella and Their Surgical Treatment. C. B. Lockwood.

22. **Rheumatic Manifestations in Childhood.**—In Moon's opinion, there is one thing more important than all else in the treatment of rheumatism, and that is rest. Thus the rheumatic nervous children should have their school hours reduced, and in particular should not be allowed to work in the evening; in addition, an hour's enforced rest in the middle of the day is often advisable in such cases. But it is above all in the cardiac manifestations that rest is of such sovereign importance; a couple of months or more in bed is none too much when a cardiac lesion has been detected, and when the child first gets up, great caution must be exercised for some months longer. In the present state of knowledge this is far the most important thing to be done in order to save the heart from an entire breakdown of compensation. It is important that these children be warmly clad, but there is no reason why they should not eat the same food as ordinary healthy children. Care should be taken that they are not overworked at school or over-fatigued by too much exercise; any indication of this, such as headache, restlessness at night or general nervousness should be promptly treated by stopping school work, resting at home for two or three weeks, and, perhaps, it may be well to give small doses of arsenic and iron or cod-liver oil and iron, always bearing in mind the insidious attack which rheumatism so often makes on a vital organ.

28. **An Anomalous Cutaneous Eruption.**—The patient whose case is reported by Wills was a boy, 6 years old, who had had tonsillitis, cervical adenitis and sore throat. The skin eruption followed. The skin over the shoulders became scaly, and this condition spread in a couple of weeks to the whole trunk, and to a lesser extent to the thighs, arms, neck and face, but did not involve the hands, feet or scalp. By the end of the month, while the scaly condition was extending, the parts first involved were showing more inflammatory changes, and a small amount of serous discharge appeared, and the scales were shed, leaving a raw surface. At the end of three weeks, the whole of the trunk had become "raw," the conjunctiva had become involved, the gums and lips were also ulcerated, and the condition of the child most pitiable. The discharge had soon become purulent and offensive, but no local treatment seemed in any way to allay the symptoms. The temperature was of a septic type, but did not run very high. He presented the appearance of a profound toxemia. Cultures were made from the throat lesions, from the nose, eye and the skin lesions, and all were returned "positive Klebs-Loeffler." Almost immediately after injecting diphtheria antitoxin improvement began to set in. The local treatment had comprised boric ointment and zinc and mercury applied on lint.

Annales de Gynécologie et d'Obstétrique, Paris

March, XXXVIII, No. 3, pp. 129-192

31 *Myelitis and Polyneuritis During Toxic Vomiting of Pregnancy. L. Job.
32 Carcinoma of the Uterus. G. Rossier.
33 Superheated Air in Treatment of Gangrene, etc. (Quelques résultats de l'aéro-thermo-thérapie.) R. Dupont.
34 Transient Retention of Nitrogen During Protracted Delivery. A. Couvelaire.

31. **Polyneuritis During Pregnancy.**—Job has compiled sixteen cases of myelitis or polyneuritis occurring in the course of toxic vomiting in pregnant women. In each case in which the pulse is recorded the rate had been over 100 before the signs of paralysis developed, confirming the necessity for active measures whenever the pulse runs over 100 in the vomiting of pregnancy. Five of the women died; six were delivered at term but most were left with severe functional disturbances. In five cases the gravity of the symptoms led to early interruption of the pregnancy and the outcome was by far the most favorable in this group. In a case reported in detail, abortion was not induced until nearly two months after the first symptoms and the patient did not long survive. The auto-intoxication seemed to follow a regular course in the entire sixteen cases, affecting first the vomiting center, then the cardiac center and, finally, the peripheral nerves. The nervous symptoms may continue to develop after all the gastric symptoms have subsided and, once installed, they show scarcely any tendency to subside so long as the pregnancy persists. The prognosis is better with abortion or premature delivery induced in time.

Annales des Maladies des Org. Génito-urinaires, Paris

March 15, XXIX, No. 6, pp. 481-576

35 *Calculus in Kidney or Ureter in Children. (De la lithiase rénale et urétérale chez l'enfant.) M. Rafin.
36 Action of Colon Bacillus on the Kidney. (Action du "Bacterium coli" sur le rein.) F. Cuturi.
37 *Technic for High Incision of the Bladder. (Taille hypogastrique.) O. Pasteau.

35. **Calculus in Kidney or Ureter in Children.**—Rafin has been able to collect thirty-nine cases of this kind in children in which the stones were found in the kidney or ureter at an operation or necropsy. He has also operated in two cases. The symptomatology seems to be the same for children as for adults, but radioscopy is even more instructive with children. The knowledge that there are stones located at different points through the urinary apparatus is important, as the gravity of the condition is enhanced by the multiplicity of the localizations. Nephrotomy seems to be even less injurious in children than in adults. The immediate results were good in all the cases after the operation; the four fatalities were all in cases with severe infection and multiple concrements. The end-results are known in only very few of the children. It is more than probable, he thinks, that in many cases of urinary calculi in adults, the concrements had commenced to form in childhood, as in a case cited in which a stone, weighing 25 gm., was removed from the ureter of a girl of 16, who for ten years had had occasional kidney colics and hematuria. Five of the thirty-nine children were under 5, eighteen between 5 and 10, and twelve between 10 and 15. The lithiasis was exclusively on the right side in twenty-one cases and bilateral in six of the thirty-five in which the localization is mentioned; the concrements were in the right kidney alone in seven, right ureter alone in eleven, both kidney and ureter in two, while both were involved on both sides in three cases and in another bilateral case the bladder was also involved, as also in another case exclusively on the right side. In one of Nicolich's cases, radioscopy showed a stone in the right kidney, three in the left, and five in the left ureter. The latter were spontaneously expelled and the kidney stones removed by operation, after which radioscopy showed the entire urinary apparatus clear of concretions. In conclusion Rafin reiterates the comparative harmlessness of operations on the urinary apparatus in children and the necessity for keeping watch over the little patients so as to institute medical measures to ensure a permanent cure of the infectious process; it is liable to persist in a latent form unless diligently sought and eradicated.

37. **Technic for Suprapubic Incision.**—Pasteau stands on the left side of the patient and raises the pelvis before opening up the prevesical space. Then, when ready to incise the bladder, he has the pelvis raised still higher, as much as 35 or 40 degrees, not lowering it until the bladder has been sutured again. He distends the bladder with air and makes the incision in a part of the wall lifted up by two catgut threads run into the wall on each side of the median line, these threads aiding later in the suture.

Bulletin de l'Académie de Médecine, Paris

March 28, LXXV, No. 13, pp. 415-462

38 Sixteen Years of Antitetanus Serotherapy. Vaillard.
39 Preliminary Medical Education in France. (Nos écoles préparatoires.) Motais.
40 *Syphilitic Jaundice. (Ictère syphilitique—Ictère hémolytique ou sanguin.) E. Gaucher and Giroux.

40. **Syphilitic Jaundice.**—Gaucher and Giroux report two additional cases of syphilitic jaundice accompanying the secondary manifestations and developing with the clinical and blood findings of acquired hemolytic icterus. There was no general reaction nor signs of biliary intoxication, pruritus or bradycardia. The destruction of the red corpuscles was due to their abnormal fragility in one case and in the other to the presence of hemolysins in the circulating blood. Both types differ entirely from catarrhal jaundice which is an ordinary icterus with no syphilitic features.

Journal de Chirurgie, Paris

February, VI, No. 2, pp. 137-248

41 *Treatment of Extensive Phlegmon of the Synovial Sheaths in the Hand. (Remarques sur le traitement des phlegmons graves des gaines synoviales de la main.) P. Lecène.

41. **Extensive Phlegmon of the Synovial Sheaths in the Hand.**—Lecène has never obtained any benefit from Bier's method of inducing hyperemia in these serious cases, and quotes Forsell's actually disastrous experience with it. He adds that even in Germany this method is comparatively little used now in this class of cases. The best results are obtained, he asserts, by a long incision following the tendon sheath and extending the whole length of the infected segment. According to its location, the incision starting above the wrist was carried to the tip of the thumb, of the little finger or the second finger in the four cases reported. The grave lesion healed without impairment of the functioning of the wrist in each case, and the fingers regained normal functioning in all except two of his patients, in whom the little finger was left stiff, the tendon in this finger having been totally destroyed by the suppurative process. His patients were two men and two women, all in the forties.

Lyon Médical, Lyons

March 26, CXVI, No. 13, pp. 553-592

42 Growth of the Long Bones. (Note sur la croissance des os longs.) Galloid and Latarget.

Presse Médicale, Paris

April 1, XIX, No. 26, pp. 253-268

43 Inaugural Lecture in Neurology. Dejerine.
44 Abdominal Cavity from the Surgical Standpoint. H. Hartmann.

Semaine Médicale, Paris

April 12, XXXI, No. 15, pp. 169-180

45 *Rupture and Perforation of Pyosalpinx. F. Lejars.

45. **Rupture and Perforation of Pyosalpinx.**—Lejars reports another case of this kind to supplement five others he has previously reported. He also reviews what Bonney *and others* have published on the subject, emphasizing the necessity for bearing in mind the possibility of rupture of a pyosalpinx when confronted with menacing peritonitis of unknown origin. The history of the case generally shows some acute flare-up of an infectious process just before and a slight contusion afterward inducing the rupture or perforation. The pyosalpinx may also rupture during delivery or measures to induce abortion. Chevassu recently reported a case of this kind; a woman introduced a long bone cannula supposedly into the uterus and during the night abdominal symptoms developed with fever; *pulse was weak and* 130, and the abdomen was found flooded with pus traced to one tube containing several small interstitial abscesses. The tube was removed, as the condition of the patient did not permit hysterectomy. She died in less than five days. Mary has encountered *three similar* cases in lying-in women. All succumbed and one tube was found perforated. Puerperal infection was the presumptive *diagnosis and* the flaring up of a puerperal process may lead to rupture of a hitherto latent pus tube. Galliard has reported a case in which a woman convalescing from typhoid suddenly developed severe colic, vomiting and tympanites, high fever and pulse of 160. When the abdomen was opened no perforation could be found in the intestines but the right tube was swollen and perforated and it was excised; the patient rapidly recovered. Typhoid bacilli were cultivated from the pus in the excised tube. Lejars found streptococci exclusively in the pus in one case of diffuse peritonitis from rupture of a left pyosalpinx, and death speedily followed. Latzko and Cotte have each reported a case of ruptured abscess in an ovary. Lejars has also encountered two cases in which the tube had perforated and had become gangrenous, the conditions resembling exactly *those in a gangrenous appendix.* The *peritonitis following* perforation of a pus tube is, as a rule, unusually grave and rapidly progressive; the pains are localized in the pelvis, and are severe from the first; the findings with vaginal palpation may give the clue to the suppurating focus in the uterine adnexa. The condition is frequently mistaken for appendicitis *or a ruptured tubal pregnancy. Differentiation* is important on account of the necessity for prompt operation without temporizing; removal of the diseased tube and possibly the uterus with the adnexa is the safest course.

Berliner klinische Wochenschrift

April 10, XLVIII, No. 15, pp. 653-696

46 Experimental Syphilis in Rabbit. (Experimentelle Impfsyphilis der Kaninchen.) P. Uhlenhuth and P. Mulzer.
47 Transportable Apparatus for Inhalation of Radium Emanations. A. Bickel and W. Engelmann.
48 Excision of a Liver Cavernous Angioma. *(Fall von Exstirpation eines Lebercavernoms.)* J. Israel.
49 Development of a Sarcoma on Floor of a Lupus Carcinoma. E. Senger.
50 *Diagnostic Importance of Laryngeal Paralysis. (Kehlkopflähmung.) H. Grabower.
51 **Control of Strychnin Poisoning by Intratracheal Insufflation and Ether.* T. S. Githens and S. J. Meltzer (New York).
52 **Improved Method of Artificial Respiration.* G. Meyer.
53 **Flat-Foot Disturbances and Deforming Arthritis.* P. Ewald.
54 Anaphylaxis of Pregnancy. (Die Ueberempfindlichkeitserscheinungen in der Schwangerschaft.) A. Hirschberg.

50. **Diagnostic Importance of Paralysis of the Larynx.**—Grabower insists that examination of the larynx is as important as that of the fundus of the eye in all nervous affections, and should be a routine procedure. Paralytic conditions in the larynx may exist without causing appreciable symptoms; they may even be the earliest sign of tabes dorsalis and possibly permit effectual treatment before irreparable lesions are installed. The *laryngeal disturbance* with multiple sclerosis may be merely a tremor of the vocal cords or a twitching movement, but laryngeal symptoms deserve to rank as a diagnostic measure with nystagmus and temporary blanching of the papilla. *Paralysis in the* larynx is, further, characteristic of syringomyelia, especially unilateral recurrent paralysis. Grabower's research has shown that the posterior crico-arytenoid muscle has only 230 nerve fibers in comparison with the 680 fibers of the inner portion of the thyro-arytenoid muscle; it is thus less resistant and becomes paralyzed more readily. As tuberculosis frequently begins in the bronchial glands and these compress the recurrent laryngeal nerve, paralysis of the posterior crico-arytenoid muscle controlling the vocal cords may be observed in the very earliest stages of incipient tuberculosis. The right recurrent nerve is more liable to be compressed in this case than the left, as the *right bronchus is* higher than the left and thus closer to the right inferior laryngeal nerve. The left is more liable to suffer from compression by aortic aneurysm as the left nerve encircles the arch of the aorta and is thus liable to be compressed quite extensively. The right inferior laryngeal nerve may be compressed with an aneurysm in the subclavian artery. Enlargement of the thyroid *may* also compress this nerve, and signs of paralysis in the larynx indicate extension of the goiter into the depths. *The same is true of tumors in the esophagus,* the posterior crico-arytenoid muscle feeling the effects first but the rapid growth of *the carcinoma soon involving* the recurrent laryngeal nerve. Another cause of peripheral paralysis of the recurrent nerve is a healed inflammatory process in the right apex of the lungs. Nerve substance may be found embedded in the cicatrix at necropsy; there probably had been recurrent paralysis during life causing moderate hoarseness for which no cause could be discovered. The hoarseness may have subsided and yet the unilateral recurrent paralysis must have persisted throughout life, the sound *vocal cord vicariously acting* for the paralyzed one. The right inferior laryngeal or recurrent nerve passes close to the right apex of the pleura, and is thus naturally drawn *into the retracting cicatricial tissue* as the inflammatory process in this region heals. Mitral stenosis is sometimes accompanied by paralysis of the left recurrent nerve. In regard to laryngeal paralysis with brain tumor, he says that unless the medulla oblongata is investigated, the examination cannot be regarded as complete. Among other symptoms in the larynx mentioned is the twitching of the vocal cords liable to be noticed with a *tumor in the frontal* lobe. Twitching of the vocal cords, Grabower states, is presumptive evidence that the tumor is in the base of the frontal lobe and that it is actively growing.

51. Summarized in THE JOURNAL April 22, 1911, p. 1224.

52. **Improved Method for Artificial Respiration.**—Meyer has modified the Silvester method, drawing the arms upward but pressing them down toward the floor, the body thus assuming the opisthotonous attitude, the head and heels bent backward, the body bowed forward, over the cushion under the shoulders. *Another point is that* the arms are held with the four fingers above the elbow, on the inside, the thumbs on the outside of the arms. This permits a stronger control of the arms in pushing them toward the floor. This modified technic floods the lungs much more profusely with air.

53. ***Flat-Foot and Arthritis.***—Ewald presents evidence to show that the changes of flat-foot leave disturbances such as in all other joints are known as deforming arthritis.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 1, XLI, No. 10, pp. 337-384

55 Medicolegal Aspect of Induced Abortion. (Mutterschutz und Strafrecht.) A. Goenner.

Deutsche medizinische Wochenschrift, Berlin

April 6, XXXVII, No. 14, pp. 625-672

56 Ulceration in the Intestines. (Diagnose und Behandlung der Darmgeschwüre.) C. A. Ewald.
57 **Operative Treatment of Phlegmon in Stomach Wall.* (Ueber Magenwandphlegmone im subakuten Stadium und eine Heilung durch Magenresektion.) F. Koenig.
58 *Subacute Patches of Myelitis with Recurring Endocarditis. H. Lewy and F. H. Lewy.
59 Arsenic Necrosis. L. Geyer.
60 *Kala-Azar in Greece. A. Christomanos.
61 Differential Manometer. (Das logarithmische Differentialmanometer—ein neuer Apparat für physiologische und klinische Druckmessungen.) T. Christen.
62 Permeability of Glass for Ultraviolet Rays. A. Bieber.

57. Phlegmon in Stomach Wall.—Koenig's patient was a woman of 28 whose illness had commenced with high fever, headache and vomiting; typhoid had been assumed at first. After subsidence of the acute symptoms pains in the stomach, independent of intake of food, persisted, with oppression and vomiting at times of brownish yellow masses but there was no blood in the stool and no diarrhea and the gastric chemistry was approximately normal. The appetite remained good but the woman grew constantly thinner, losing over 50 pounds in weight; palpation revealed a soft, transverse, long tumor which slid about under the fingers. The trouble proved to be a suppurative inflammation of the stomach wall, a purulent gastritis, which had passed into a subacute stage. The mucosa was perforated in various places, almost like a sieve, while the serosa showed signs of peritonitis and adhesions were forming. It is the first case on record in which the process was inspected at such an early stage and excision of the lesion restored the patient at once to health. The case shows that even after the phlegmon has emptied itself and the pus has been vomited up, yet the lesion does not necessarily heal but may persist in a subacute form, and progressively debilitate the patient. A gastro-enterostomy would not have mended matters, while resection without preliminary opening up of the stomach proved a complete success, the soft tumor-like mass into which the phlegmonous part had been transformed being readily excised.

58. Myelitis with Recurring Endocarditis.—Lewy's patient was a woman of 37 with chronically recurring endocarditis and an inflammatory affection of the spinal cord and meninges located at three different points. The affection ran a separate course at each of these points, each being preceded by a recurrence of the endocarditis. During the year and a quarter before the final fatal termination the symptoms had suggested the most various and erroneous diagnoses until microscopic examination cleared up the mystery except in regard to the puzzling behavior of the reflexes. Lewy has not been able to find any similar case on record. The foci in the spinal cord were of a chronic degenerative character in the anterior horns of the sacral segment of the cord, while the process in the upper dorsal segment was a circumscribed meningitis, and the final trouble was an acute disseminated encephalomeningitis.

60. Kala-Azar in Greece.—Christomanos recently found the Leishman-Donovan bodies in two hospital patients at Athens, and he thinks that kala-azar is probably prevalent in Greece although it has hitherto been diagnosed as a form of malaria, rebellious to quinin. A certain disease described by Hippocrates as endemic in Greece seems to have been kala-azar, which thus is shown to be not a new importation. No benefit was derived in Christomanos' cases from either atoxyl, arsacetin or salvarsan. Forty-eight hours after an intravenous injection of 0.35 gm. salvarsan the parasites were found still numerous and unmodified in the blood taken from the spleen. Quinin and change of climate gave no relief. The first patient, a girl of 18, has had fever constantly twice a day for nine months; the reactions for syphilis, Malta fever and tuberculosis are negative. The blood shows 1,700,000 reds, hemoglobin 30 per cent. The other patient is a man of 30 and he has had a chill and fever every evening for thirteen months. The spleen is enormously enlarged in both patients and the parasites can be readily detected in blood obtained by puncture of the spleen.

Medizinische Klinik, Berlin

April 9, VII, No. 15, pp. 559-596

63 *General Principles for Treatment of Uterine Myomas. H. Peham.
64 *Formation of Concrements in the Urine and Means to Influence It. (Die steinbildenden Prozesse des Harns und die Wege ihrer Beeinflussung.) H. Schade.
65 *Recurrences in the Nervous System After Salvarsan Treatment of Syphilis. (Zur Neurotropie und Depotwirkung des Salvarsans.) K. Heuser.
66 Potassium or Sodium Bromid? (Bromnatrium oder -kalium?) P. Jödicke.
67 Technic for Intravenous Salvarsan Treatment of Syphilis. (Injektion oder Infusion bei der intravenösen Salvarsanbehandlung?) H. Assmy.
68 *Improved Technic for Saline Infusion. (Kochsalztransfusion.) H. Hellendall.
69 Cataract Operations. (Die moderne Technik der Staroperation.) W. Feilchenfeld.
70 Syphilis of the Bronchi. A. Posselt.
71 Etiology of Trachoma. C. H. Sattler.

63. Uterine Myoma.—Peham dreads the general anesthesia for a debilitated patient with myoma more than an operation. He comments on the bread-like consistency of myomas and the symptoms liable from pressure and traction on the uterus and on the adjacent organs. There may be no pains but when they exist they may be intensified during menstruation, the hyperemia of the myoma itself adding to the disturbances. Ascites is not unusual as a complication and thrombosis is favored by the pressure. In respect to palliative treatment, he remarks that the cures that have been reported after a course of baths must have been due to an erroneous diagnosis or to the approaching menopause in which the myoma retrogressed. Iodin and its salts promote absorption of inflammatory products and stimulate the circulation so that the general health is favorably influenced. The history of operative treatment of uterine myoma, he says, is one of the most brilliant chapters in gynecology, the mortality having dropped from 36.2 per cent. in 1878 (Gusserow), and 23.1 per cent. in 1891 to 3.8 per cent. in Döderlein's 388 cases of the last six years. Peham's mortality has been 5.4 per cent. in 164 laparotomies and 0.5 per cent. in 180 vaginal hysterectomies for myoma.

64. Chemical Processes in Urinary Lithiasis.—Schade's announcements in regard to the share of the colloids, especially fibrin, in the production of concrements in the body are reviewed below in abstract 75. He comments here on the new horizons opened for therapeutics and prophylaxis by means to prevent precipitation of colloids or to dissolve their precipitates when already formed. It is easy to do this *in vitro* and the task now is to discover some substance which will do this harmlessly in the body. He calls the attention of physicians at watering places, in particular, to this task as many of the problems involved can, perhaps, best be studied with mineral waters.

65. Nervous Disturbances during Salvarsan Treatment of Syphilis.—Heuser reports a case of papulous iritis a few days after intramuscular injection of 0.2 gm. salvarsan, followed by an intravenous injection of 0.4 gm. salvarsan. Then epileptiform seizures developed. The patient was a painter but there were no signs of lead poisoning; it is possible, however, that the lead might have created a predisposition. In a second case a young workman had paralysis of the vocal cords and soft palate three days after an intravenous injection of 0.5 gm. of salvarsan. No paralysis of this kind had ever before been observed at the clinic in the early stages of syphilis. No improvement was observed under calomel for several weeks but recently slight improvement has become manifest. This patient also presented occasional outbreaks of profuse perspiration during the two months he was in the hospital, suggesting a possible general injury of the nervous system. In a third case, ten weeks after a subcutaneous injection of salvarsan, severe symptoms on the part of the brain developed including choked disc, intense headache and facial paralysis with epileptiform seizures. Heuser is convinced that the cases of cerebral syphilis with these peculiar tonic-clonic spasms are encountered more frequently under salvarsan treatment than corresponds to our previous experience. He tabulates further the findings in regard to the presence of arsenic in the urine after salvarsan treatment; they show that from six to nine months after intramuscular injection arsenic can be detected in the urine (twenty-three cases) and three months after intravenous injection. In one case the arsenic was refound in the blood, also, two months after the intravenous injection. The experiences related apparently confirm, he thinks, Buschke's view in regard to the special affinity of salvarsan for nervous tissue. This neurotropic action of salvarsan is confirmed further, he adds, by Walterhöfer's case of peroneus paralysis, the cases of epileptiform seizures reported by Spiethoff, Gilbert and others, Jorgensen's fatality, and the disturbances in the auditory and optic nerves reported by Stern, Rissom and Bettmann.

68. Saline Infusion in Emergencies.—To save time, Hellendall carries in his obstetric bag a concentrated solution of chemically pure salt (8 to 30), so that all that is necessary is to dilute it with boiling water and cool to the desired temperature by standing in a jar of running water.

Monatsschrift für Kinderheilkunde, Leipsic

March, IX, No. 11, pp. 593-632

72 Research on the Colostrum. (Zur Physiologie des neugeborenen Kindes.) W. Berk.
73 Pathology and Therapy of the Secreting Breast. (Die laktierende Mamma.) A. Schiller.

Münchener medizinische Wochenschrift

April 4, LVIII, No. 14, pp. 721-776

74 [illegible] es and Dyscrasias. (Die [illegible] Lichte unserer wissenschaft- [illegible] rung.
75 * [illegible] Concrements in the Body. [illegible] betreffs der steinbildenden Prozesse *im Körper.* II.) H. Schade.
76 Pancreatitis with Cholelithiasis. (Entstehung der Pankreatitis bei Gallensteinen.) L. Arnsperger.
77 *Hemolytic Test with Cancer. (Ueber Komplementablenkung bei Karzi [illegible]
78 *Recurrences [illegible] After Salvarsan Treatment of [illegible] und Therapie der Neurorezidive [illegible].) J. Benario.
79 Instantaneous Skiagraphs. (Ueber Röntgen-Blitzaufnahmen.) W. Alwens.
80 *The Tourniquet Sign of Scarlet Fever. (Zur Bestätigung des Rumpel-Leedeschen Phänomens bei Scharlach.) H. Bennecke.
81 Juvenile Criminals and Attenuated Responsibility. (Straffällige Jugend und psychopathische Minderwertigkeit.) Rupprecht.
82 Value of Epidural Injections in Treatment of Idiopathic Vulvar Pruritus and Other Sacral Neuroses. G. Schubert.
83 Conflicting Formulas for Albumin Milk in Infant Feeding. (Die Eiweissmilch.) F. Siegert.

75. **Formation of Calculi.**—Schade has continued his research on this subject and states that colloids are involved in the production of stones in the body to a far greater extent than has hitherto been realized. The colloids throw down precipitates which assume the form of strata. Fibrin, for instance, has this power of stratification-precipitation to a marked degree. If it is deposited on an unattached particle, the stratification occurs concentrically. Crystalline substances deposited with it unite to form the concrement; this applies to all calculi formed in the urinary and salivary passages, in the pancreas or in the intestines, prostate or joints and also to the bilirubin-lime stones, but cholesterin stones are formed by the confluence of droplets. The problem of stone formation is brought nearer solution by the discovery of the participation of the colloids, he declares, and the outlook for therapeutics is broadened. It may be possible to alter the medium in such a way that the colloids, especially fibrin, may be prevented from precipitating; if the medium is rendered more alkaline, the colloid remains dissolved and no precipitation occurs. Changes in the electrolytic property may also check the tendency to precipitation of colloids. The benefit from mineral waters in some cases may be explained by their influence on the precipitation of colloids. In his experiments he found that antiformin would dissolve out the colloids, leaving the crystalline elements practically unaffected; the latter dropped to the bottom of the dish as the colloid framework was dissolved by the antiformin, confirming the large share of the colloids in the stone formation. In conclusion he calls attention to the efforts of Nature in this line; in the fresh-water crab (*Astacus fluviatilis*) typical stratification stones form in accessory cavities of the stomach by glandular secretions, the stones being formed of calcium carbonate and phosphate, with organic colloids, the so-called crabstones. They serve a physiologic purpose as a deposit to be drawn on when the crab casts its shell and a new one forms. The stones then drop out into the lumen of the stomach and are rapidly dissolved by the gastric juice and ferments and are absorbed in the intestine. Nature teaches us in this example that it may be possible to influence the pathologic concrements in man in a similar way when the conditions determining the solution and precipitation of the colloid elements in the stones are better studied.

77. **Deviation of Complement with Cancer.**—Caan applied the Wassermann test in eighty-five cases of carcinoma with positive findings in 41 per cent. The reaction was positive in six out of seven cases of carcinoma of the lip, in 67 per cent. of fifteen chancroids and epitheliomas, while positive findings were obtained in only 9 per cent. of the cases of mammary cancer and in 17 per cent. of the thirty-one gastro-intestinal cancers. He applied the deviation of complement test in all its various modifications in each case, with parallel findings.

78. **Recurrence in Nervous System after Administration of Salvarsan in Syphilis.**—Benario sent out a question blank to a number of physicians to collect their experiences in this line. In 126 (147) of the 14,000 cases in which salvarsan has been applied a neuro-recurrence was observed, and he classifies these cases under various headings and compares the findings with the experiences of others with and without salvarsan treatment. The total material confirms, he says, Ehrlich's explanation of these disturbances as manifestations of the syphilis in nerves enclosed in narrow bony canals, not of a drug toxic nature but the work of the few spirochetes left after the destruction of the majority of the spirochetes by the treatment. The striking clinical symptoms are not due to the extent of the process, he says, but to the confined site. Study of the data collected shows that the early secondary stage is peculiarly predisposed to these neuro-recurrences, as also the cases in which the primary sore is extragenital. The malignant character of these extragenital primary lesions, especially those on the head, the *chancres céphaliques*, is well known; the latter being near the central nervous system are peculiarly liable to affect it. Pre-existing headache also should warn against the possibility of neuro-recurrences; there had been intense headache in thirty-six of the sixty cases mentioned in the question blanks in which the headache pointed unmistakably to the injury of the central nervous system by the spirochetes. The conclusion naturally follows that patients with these four predisposing factors should be excluded from salvarsan treatment or its dangers should be fully aired. The data presented further emphasize the advantages of treatment by an intravenous injection of salvarsan, this being followed by a vigorous course of mercury, and this in turn with another intravenous injection of salvarsan. Elderly patients and those debilitated from any cause should be excluded from salvarsan treatment. Benario adds that the attention now paid to manifestations of syphilis in the nervous system will certainly redound to the benefit of patients, as more vigorous treatment will be instituted and the syphilis will be eradicated, thus saving many who might otherwise be candidates for serious irreparable cerebrospinal disease later.

80. **Tourniquet Sign of Scarlet Fever.**—Bennecke confirms the reliability of this sign, described in THE JOURNAL, March 18, 1911, page 859. The absence of the sign seems to exclude scarlet fever, but positive findings are sometimes obtained in other diseases.

Therapeutische Monatshefte, Berlin

April, XXV, No. 4, pp. 209-268

84 *Treatment of Placenta Prævia. R. Birnbaum.
85 *Treatment of Congenital Torticollis. (Der angeborene Schiefhals.) P. Glaessner.
86 *Successful Decompressive Trephining. (Erfolgreiche Trepanationen ohne Befund.) M. Lewandowsky.

84. **Treatment of Placenta Prævia.**—Birnbaum describes the treatment he advocates for the general practitioner, emphasizing that treatment must be begun the moment the diagnosis is made. He insists on shaving the parts and on the use of ten or twenty moist cotton wads for tamponing the vagina, instead of gauze, although the latter is better for the uterus itself. His experience with the Momburg belt constriction has been unfavorable, as he had severe collapse in two cases, and one patient died; for this death he regards the constriction as responsible. Great caution is necessary in moving the woman on account of the danger of air embolism and thrombosis. Massage of the legs is necessary from the first day after delivery unless symptoms indicate that thrombosis is already installed.

85. **Congenital Torticollis.**—Glaessner severs the muscles subcutaneously in the very mild cases in young children but otherwise exposes the sternocleidomastoid muscle and resects the fibers for a stretch of 1 or 1.5 cm., afterward applying a plaster cast in over-correction.

86. **Successful Trephining without Findings.**—Lewandowsky reports two cases in which the patients were restored to health by decompressive trephining although nothing was found when the skull was opened to explain the symptoms that had been

observed. The first patient was a woman of 36 who developed intense headache and symptoms indicating disease of the left hemisphere after a slight trauma—striking the left side of her head against the edge of an open door. By the end of a month she had seizures suggesting epilepsy, with right paralysis, total aphasia and stupor. Conditions were found apparently normal on trephining but there must have been a high tension in the brain as there was prolapse of brain tissue, but the patient improved remarkably by the next day. She still has traces of paraphasia but otherwise has been well during the four years since. In the other case, intense headache and tenderness in the region of the temple persisted for six months after the young man had been kicked in the side of the head by a horse, after which he had been unconscious for four days. The trephining showed apparently normal conditions with no sign of abnormal pressure or inflammation, but the headache never returned after the operation and the patient has been in perfect health during a year since. The strict localization of the headache, its tenacity and the lack of neurasthenic or hysteric symptoms and the complete recovery after the operation suggest that the trouble must have been some traction on the dura from a possibly slight fracture of the skull.

Therapie der Gegenwart, Berlin

April, LII, No. 4, pp. 145-192

87 *Epidemic Poliomyelitis. (Akute epidemische Kinderlähmung.) P. Krause.
88 *Radiotherapy of Internal Disease. (Der gegenwärtige Stand und die nächsten Ziele der Röntgen-Therapie bei Erkrankungen innerer Organe.) H. E. Schmidt.

87. **Epidemic Poliomyelitis.**—Krause has compiled a number of tables showing the geographical and chronological prevalence of this disease. Other tables show the development of the disease by groups compiled from the replies to the question blanks he sent out to physicians in the German provinces along the Rhine. The transmission of the disease by healthy carriers is further demonstrated by the material tabulated. A grandmother in one instance carried the disease from one grandchild to another who lived at some distance. Another table shows the ages of the patients in his compiled material. The majority were 2 years old (165); 101 were 3 years old, ninety-seven between 4 and 7, thirty between 8 and 10, three between 20 and 30, and two between 30 and 40, with eleven less than a year old. In Germany the months of August, September and October contained nearly all the cases. The mortality in all the epidemics tabulated was the lowest (5 per cent.) in the New York epidemic; it was 16.7 per cent. in Sweden; 14.56 per cent. in Norway, and 22.3 in Austria. The article is to be continued.

88. **Radiotherapy of Internal Organs.**—Schmidt refers in particular to the treatment of deep cancer and states that better results may be anticipated when we learn how to sensitize the deep-lying tissues. This is accomplished for superficial tissues by means to stimulate the metabolism, for which active hyperemia is the most effectual known to date. If we can learn how to induce local hyperemia in the deep cancers, the Roentgen rays reaching them will have their action immeasurably enhanced. He thinks that it may be possible to discover some serum or drug, which, like tuberculin, will have an elective action on the tumor tissue inducing a local reaction and thus sensitizing it for the Roentgen rays. At present the only way that this can be accomplished is by thermopenetration, that is, applying the high-frequency current, which permits the tissues below to be raised to any desired temperature while sparing the skin. He reports the details of a case of epithelioma of the nose which subsided under radiotherapy after two years but returned four years later. The patient refused operation and the ulcerating epithelioma subsided anew under the Roentgen rays applied the day after the mercury-vapor lamp had been used to induce a local erythema. Only four applications of the mercury light plus Roentgen-ray exposures were required before the lesion had entirely healed over. There has been no sign of recurrence during the three months since. The mercury light was applied again a few times to enhance the resisting power of the cicatrix. The task now before Roentgenologists is to improve the technic for inducing hyperemia in the depths to enhance the sensitiveness to the Roentgen rays, as we know that expelling the blood from a superficial lesion reduces its sensitiveness to the rays.

Wiener klinische Wochenschrift, Vienna

April 6, XXIV, No. 14, pp. 479-518

89 Pigmentation of the Skin. (Zur Kenntnis der menschlichen Hautpigmentierung.) Y. Tanaka.
90 The Lipoid of the Suprarenal Cortex. (Das Lipoid der Nebennierenrinde.) H. Albrecht and O. Weltmann.
91 *Psychic Etiology and Treatment of Arteriosclerosis. M. Herz.
92 *Paroxysmal Hemoglobinuria. A. Krokiewicz.
93 Oculomotor Paralysis in an Infant. A. Purtscher.

91. **Arteriosclerosis and the Strenuous Life.**—Herz regards the subject of arteriosclerosis as one of the most vital of all for the medical profession not only on account of their patients but because physicians, themselves, are particularly prone to acquire arteriosclerosis or at least to imagine that they are acquiring it. He says that fully 300 out of the 3,000 physicians in Vienna have consulted him on account of arteriosclerosis, and although the fears of many were groundless, yet an unusually large proportion actually show signs of arteriosclerosis. For this he is inclined to incriminate the peculiarly strenuous life of physicians, their cares and worries, the constant strain on their sympathies, the harassing feeling that perhaps if they had treated some patient along other lines he might have done better. Herz comments on the fact that life has become so much more strenuous during the last decades. All feel that they must work under high pressure and provide for the future instead of enjoying life as they go along and providing only for the immediate present. He says that life has become Americanized, and that arteriosclerosis is becoming more frequent in consequence although it is more of a chronic cardiac and cardiorenal type rather than the angina pectoris type of former decades. Treatment and prophylaxis should aim to banish worry and gloom and promote cheer. Instead of impressing on the young constantly their duties and responsibilities to others and the state, they should be taught that they have a duty to themselves, to seek cheer and joy to alternate with work. Physicians must train their patients to look on the bright side of things and stop worrying, for there is not the least doubt, he reiterates, that every persisting worry or carking care is distinctly dangerous for the heart and kidneys, and physicians must strive to cultivate cheeriness. Herz applies to the medical profession Goethe's remark in regard to German literary men, namely, that the members of the medical profession are like billiard balls; each is intent only on going its own way, and if two come into contact they bound apart and go their separate ways with even greater energy and haste.

92. **Paroxysmal Hemoglobinuria.**—Krokiewicz reports a case of this kind in a man of 48, previously healthy. The paroxysmal hemoglobinuria was first observed seven years ago and since then he has had the attacks whenever he has been much chilled; great fatigue and excitement do not bring on the attacks unless accompanied by chilling. Sometimes the hemoglobinuria occurs without other symptoms but generally there is a sense of exhaustion, pains in the muscles, restlessness and headache, then in twenty minutes a chill and fever and after half an hour the urine is as red as Burgundy wine; it clears up again in the course of from two to five hours. While under observation the hemoglobinuria could be brought on like a laboratory experiment by having the patient hold his feet in cold water for a little while. A tourniquet applied to the thighs never brought it on, and the attack could be arrested by applying heat (water bottles to the legs). The attacks could be brought on at intervals as brief as twenty-four hours. Hemolysins were found in the blood and their presence in the blood accumulating in the viscera in consequence of the exposure to cold, with the local accumulation there likewise of carbon dioxid in the blood, produce conditions similar to those of Hymans' test-tube experiments. Hemolysis follows and the hemoglobinuria results; the whole process can be broken up by putting an end to the action of cold by warming the legs. The Wassermann reaction was positive in this patient which possibly throws light on the unusual lack of resistance to carbon dioxid on the part of the red corpuscles.

Zeitschrift für Kinderheilkunde, Berlin

I, Nos. 5-6, pp. 423-572. Last indexed March 4, p. 706

94 The Work of T. Escherich. C. v. Pirquet.
95 *Histologic Structure and Bacillary Etiology of Papulous Tuberculides in Infants. M. Lateiner.
96 Research on the Parathyroids, with Special Regard to Tetany and Sudden Death of Infants. (Epithelkörperchen-Untersuchungen.) P. Grosser and R. Betke.
97 Chemical Study of Infants' Urine. (Chemische Teilerscheinungen im Harne gesunder und kranker Säuglinge.) E. Mayerhofer.
98 *Summer Heat and Temperature of the Home in Relation to Infant Mortality. (Sommerhitze, Wohnungstemperatur und Säuglingssterblichkeit.) H. Rietschel.

95. **Diagnostic Importance of Tuberculides in Infants.**—Lateiner regards the papulous or papulo-squamous tuberculides of infants as of blood-borne origin, and of diagnostic importance even when the tuberculide appears isolated. The Hamburger type is smaller, more superficial and free from a tendency to ulceration. Acid-fast bacilli can be regularly discovered in the papulous form in the various stages of its development, and the bacilli are capable of inducing fatal typical tuberculosis in guinea-pigs. In the ten infants with these tuberculides whose histories are reported, the cutaneous tuberculin reaction was the only other sign of tuberculosis in three; in six there was miliary tuberculosis. These tuberculides are encountered only in infants with tuberculosis of internal organs, and as they are so small and cause no disturbances they are often overlooked. They vary from a pinhead to the size of a hemp seed; they project very little; there is no encircling zone of inflammatory redness and no infiltration around. They are light red at first, then a livid brown, with a scab in the center, and when this is scratched off a shallow depression is left which does not bleed or weep. Some of the tuberculides may be very flat, without a scab, merely a dimple in the center. Lateiner found also, occasionally, small circular, slightly depressed scars of a livid brown color. From one to four tubercle bacilli were found in each tuberculide, and guinea-pigs inoculated promptly developed typical tuberculosis. A single tuberculide of this kind on the upper arm was the only manifestation of the tuberculosis in one case. In another there was one on the dorsum of one foot and three on the sole of the other, with signs of tuberculous meningitis. Other infants had one on the knee and one on the foot; another, several on feet and fingers; one a pin-head tuberculide on the elbow; another, several on leg and forearm, and still larger numbers on some of the others. In one of the infants the first two nodules subsided and four others developed elsewhere.

98. **Summer Heat and Infant Mortality.**—Rietschel has been examining conditions in the homes of the poor in Dresden in regard to the actual temperature of the rooms during the summer. Maximal thermometers or thermographs were installed and the findings recorded in daily visits by his aids. The research was limited to the tenements or houses in which more than one infant had died in the last five years. The summer was an unusually cold one, but the thermometers registered for weeks at a time in the rooms where the infants lived over 25 C. (77 F.) and in some days up to 35 and 37 C. (95 and 98.6 F.) with an outdoor temperature of 23.5 and 21.3 C. (74.30 and 70.34 F.). The heat in the living room is thus shown to be intense in the homes of the poor and this keeps up for weeks and months and is, he is convinced, the direct decisive factor in infant mortality during the heated term.

Zentralblatt für Chirurgie, Leipsic

April 8, XXXVIII, No. 14, pp. 489-528

99 Operation for Hare-Lip. (Zur Technik der Operation der Hasenscharte.) K. Vogel.
100 *Cholangiocystostomy. J. E. Lohse.

100. **Cholangiocystostomy.**—Lohse commends the palliative operation he performed in a case of severe cholemia from cancer of the common bile duct. The patient was thus tided past the dangerous period of cholemia and survived in comfort for nearly three months afterward. A long forceps was passed into the gall-bladder and through it into the adherent liver until the tip could be felt through the convex margin of the liver. A thick drain was inserted into the passage thus formed and the wound sutured around it. Only a little bile escaped the first day but the amount increased to 200 c.c. by the third and by the end of two weeks the jaundice had disappeared.

Zentralblatt für Gynäkologie, Leipsic

April 8, XXXV, No. 14, pp. 537-568

101 Etiology of Placenta Prævia. R. Meyer.
102 *Improved Technic for Tubal Sterilization. A. Labhardt.
103 Technic for Auscultation of Fetal Heart Sounds. (Neues Verfahren zur Auskultation der fötalen Herztöne und über die Zeit, in der sie zuerst gehört werden können.) R. Todyo.

102. **Tubal Sterilization.**—Labhardt describes a method of subserous resection of the tubes in common use at von Herff's maternity at Basel. Sterilization is regarded as a matter of course in cases of severe prolapse of the uterus in multiparæ over 40. He has applied the Asch method in thirty cases without a failure, but during the last two years he has avoided the disadvantages of this technic by drawing out the proximal tube for 2 cm. beyond its peritoneal mantle. The stump is then cut off and what is left withdraws into the depth of the empty mantle of the peritoneum which is then sutured and soon grows together, shutting off the stump of the tube entirely. This technic can be applied by the vaginal or abdominal route, and has several advantages, he declares, over other methods in vogue.

Zentralblatt für innere Medizin, Leipsic

April 8, XXXII, No. 14, pp. 345-368

104 Roentgen-Ray Diagnosis of Pregnancy. (Diagnose der Schwangerschaft mittels des Röntgenverfahrens.) R. v. Jaksch.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 28, XXXII, No. 38, pp. 403-410

105 Diaphragmatic Pleurisy and Peritoneal Syndrome. G. Baglioni.

April 2, No. 40, pp. 419-434

106 Experimental Research on Castration and Parathyroidectomy. A. Massaglia.

April 4, No. 41, pp. 435-442

107 Chorea in Malaria. (Corea ed infezione palustre.) V. Fusco.

Policlinico, Rome

March 26, XVIII, No. 13, pp. 389-420

108 *Acute Infections of Unknown Origin. G. Baccelli.

April 2, No. 14, pp. 421-452

109 Eosinophil Cells in Sputum in Asthma. M. Pennetta.

108. **Acute Infections of Unknown Origin.**—Baccelli refers in particular to what Leube calls cryptogenetic infections but which he designates as infections of latent origin. He claims that the conception of toxemia resulting from bacterial invasion originated in the Rome clinic before the discovery of the tubercle bacillus. The infectious germs may be classed, he says, as those inducing fever, those inducing inflammation, neurospastic conditions, neuroparalytic conditions and abnormal conditions in the blood, or combinations of these types. Differentiation of the cause of the infectious process is frequently impossible; sometimes it invades the blood first and the tissues later, sometimes the germs localize first in the tissues and pass later into the blood, possibly intermittently. The specific reaction can never be regarded as absolute, he continues; it is merely one important symptom to be estimated in connection with others. From these and other arguments cited he concludes that the aim should be to stimulate the production and the functioning of the phagocytes in all these infections of unknown origin at least; by this means the toxic substances in the blood are rapidly neutralized, and the supreme means to accomplish this is by intravenous injection of mercury bichlorid. His formula is 0.01 gm. mercury bichlorid, 0.075 gm. sodium chlorid and 10 gm. water. This injection can be repeated two or three times in twenty-four hours in the severest cases. Immediately after the injection the temperature drops, the synthetic reaction on the part of the organism to the infectious cause reduces the intensity of the infection, and he reports a number of instances to show the benefit that follows this measure. In one case of acute infectious disease, which no one was able to explain, a turn for the better followed the mercurial intravenous injection and the patient was soon restored to health. Baccelli has collected a number of similar testimonials to the life-saving efficacy of the measure and has accumulated an imposing array of testimony during the twenty years or more since he has been advocating this heroic intravenous medication.

Riforma Medica, Naples

April 3, XXVII, No. 14, pp. 365-392

110 *Echinococcus Disease of the Spleen. (Caso di echinococco della milza.) D. Biondi.
111 Spinal Anesthesia Plus Scopolamin-Morphin. (La rachistovainizzazione combinata con "sonno incerto.") G. Bazzocchi. Commenced in No. 13.

110. **Echinococcus Disease of the Spleen.**—Biondi's patient was a country woman of 42, previously healthy. A tumor was noticed in the left hypochondrium after a childbirth, but no symptoms were felt for seven years, then high fever and intense pain in the epigastrium, radiating to the back and hypochondrium, developed, with obstinate constipation. The fever dropped by a crisis and the pain in the epigastrium subsided but that in the left hypochondrium persisted, and there was pronounced eosinophilia with slight albuminuria. The operation revealed non-suppurating, multilocular hydatid cysts in the spleen, which was adherent to the diaphragm, colon and to the wall of the vena cava, but the splenectomy was finally completed.

Norsk Magazin for Lægevidenskaben, Christiania

April, LXXII, No. 4, pp. 417-528

112 Traumatic Pulsating Exophthalmos Cured by Orbital Operation. H. Lystad.
113 Dextrocardia. H. F. Høst.
114 Necropsy in Case of Cystic Kidney Over a Year After Nephrectomy. (Videre meddelelser om et tilfælde av cystenyre. P. Bull.
115 Roentgen-Ray Diagnosis of Tuberculosis of Lungs and Bronchial Glands. S. A. Heyerdahl.
116 Rectoscopy and Sigmoidoscopy. (Rekto-romanoskopi.) N. B. Koppang.

Ugeskrift for Læger, Copenhagen

March 30, LXXIII, No. 13, pp. 443-476

117 Vibratory Massage in Treatment of Chronic Pharyngitis. G. Fanøe.
118 *Medical Organization. (Lægekunsten og Lægen i Nutiden.) V. Scheel.

April 6, No. 14, pp. 477-510

119 "Tuberculin Titer" Test in Tuberculosis. (Tuberkulintiterbestemmelser hos Ftisikere.) K. Lundh.
120 *Relief of Disturbances in Swallowing by Compression of the Ear Region. (En simpel Metode til Bekæmpelse af visse Former af Synkesmerter.) P. T. Hald.

118. **Outlook of the Medical Profession.**—Scheel discusses the prevailing tendencies in regard to medicine and the medical profession and the importance of organization, commenting on the remarkably small part taken in public affairs by physicians as a rule. This, he declares, is the more striking as logically medical men should be the leaders in the movements to improve the public welfare. He ascribes this to the fact that physicians by the nature of their work are inclined to be individualists, but he warns that this tendency should be combated.

120. **Relief of Disturbances in Swallowing by Compression of the Ear Region.**—Hald's experience has confirmed the assertions of Milligan and Horne in regard to the relief of pain in the throat by strong pressure applied to the tragus or mastoid process. In thirty-two cases he was able to relieve or banish completely the pains in swallowing with inflammatory affections in the tonsils or vicinity while in fourteen other cases no benefit was apparent. He uses for the compression a light adjustable frame with two pads to press on the tragus or mastoid process on each side. He explains the effect as due to the counter-irritation on the skin at a point where the sensory nerves are closely connected (centrally) with the sensory nerve supply of the tonsils.

Upsala Läkareförenings Förhandlingar, Upsala

N. S. XVI, Nos. 4 and 5, pp. 231-348. Last indexed Feb. 4, p. 390

121 Infantilism. A. Josefson. Continued.
122 *Salvarsan in Syphilis of the Nervous System. H. Marcus.
123 Determination of Tubercle Bacilli in the Sputum. (Jämförande undersökning öfver de nyare metoderna för påvisande af tuberkelbaciller i upphostningar.) J. Heyman.
124 Experimental Research on Behavior of the Thymus After Castration or Roentgen-Ray Exposures of Ovaries or Testicles. (Thymus efter exstirpation, resp. röntgenbestrålning af könskörtlarne.) O. Gellin.

122. **Salvarsan in Syphilis of the Nervous System.**—Marcus gives the details of a dozen cases out of a total of fifty cases of syphilis of the nervous system in which he administered salvarsan. Although the remedy is powerless against severe advanced paralysis or tabes dorsalis, yet the bladder and bowel disturbances and the pains were much ameliorated and improvement was apparent in other directions; in some patients the memory improved, others lost their apathy and difficulty in speaking. Five of the patients have died since the injection, one, eight days afterward from hemorrhage in the pons; one a month later from an accidental fall; one from recurring cerebral hemorrhage, and two from the progressive course of a glioma in the brain or of chronic pyelonephritis and cystitis with diarrhea. He states that there did not seem to be any connection between the medication and the death in any instance. But the severe diarrhea in the last mentioned case is not absolutely free from suspicion in this line, although he has never seen any mention in the literature of diarrhea following administration of salvarsan.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the *courtesy of the sender.* Selections will be made for review in the interests of our readers and as space permits.

Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder. By Paul M. Pilcher, A.M., M.D., Consulting Surgeon to the Eastern Long Island Hospital. Cloth. Price, $5.50 net. Pp. 398, with 233 illustrations. Philadelphia: W. B. Saunders Co., 1911.

Yellow Fever. A Compilation of Various Publications. Results of the Work of Maj. Walter Reed, Medical Corps, United States Army, and the Yellow Fever Commission. Sixty-first Congress, Third Session. Document No. 822. Paper. Pp. 250. Washington: Government Printing Office, 1911.

Modern Surgical Technic in Its Relation to Operations and Wound-Treatment. By C. Yelverton Pearson, M.D., M.Ch., F.R.C.S., Professor of Surgery, University College, Cork. Second Edition. Cloth. Price, $4 net. Pp. 484, with 129 illustrations. New York: William Wood & Co., 1911.

A Working Manual of High-Frequency Currents. By Noble M. Eberhart, A.M., M.S., M.D., Professor and Head of the Department of Electrotherapy, Chicago College of Medicine and Surgery. Cloth. Price, $2. Pp. 303, with 63 illustrations. Chicago: New Medicine Publishing Co.

Plaster of Paris and How to Use It. By Martin W. Ware, M.D., New York, Adjunct Attending Surgeon, Mount Sinai Hospital. Second Edition. Cloth. Price, $1.25. Pp. 101, with 90 illustrations. New York: Surgery Publishing Co., 92 William Street, 1911.

An Introduction to Dermatology. By Norman Walker, M.D., F.R.C.P., Physician for Diseases of the Skin, The Royal Infirmary, Edinburgh. Fifth Edition. Cloth. Price, $4 net. Pp. 346, with 142 illustrations. New York: William Wood & Co., 1911.

Transactions of the American Hospital Association. Twelfth Annual Conference Held at St. Louis, Mo., Sept. 20-23, 1910. Volume XII. Paper. Pp. 413. Published by the Association Office of Secretary, Toronto, Canada, 1911.

Food and the Principles of Dietetics. By Robert Hutchison, M.D., Edinburgh, F.R.C.P., Physician to the London Hospital. Third Edition. Cloth. Price, $3 net. Pp. 615, with illustrations. New York: William Wood & Co., 1911.

The Nature of Enzyme Action. By W. M. Bayliss, D.Sc., F.R.S., Assistant Professor of Physiology, University College, London. Second Edition. Cloth. Price, $1.20 net. Pp. 137. New York: Longmans, Green & Co., 1911.

Die Hernien und ihre Behandlung. Von O. Borchgrevink, Oberarzt des Diakonenhospitals in Christiania. Paper. Price, 5 marks. Pp. 311, with 40 illustrations. Jena: Gustav Fischer, 1911.

The Fats. By J. B. Leathes, M.A., M.B., F.R.C.S., Professor of Pathologic Chemistry in the University of Toronto. Cloth. Price, $1.25 net. Pp. 138. New York: Longmans, Green & Co., 1910.

Thirty-Seventh Annual Report of the Medical Director of the Cincinnati Sanitarium. For the Year Ending Nov. 30, 1910. H. P. Collins, Secretary. Paper. Pp. 18, with illustrations.

Annual Report of the Mercy Hospital (Formerly City Hospital), Baltimore, Md. For the Year Ending Dec. 31, 1910. Paper. Pp. 72. A. C. Gillis, Medical Superintendent.

Fifteenth Annual Report of the State Medical Board, State of Ohio. For the Year Ending Dec. 31, 1910. Paper. Pp. 67. George H. Matson, Secretary. 1910.

Report of the Commissioner of Education. For the Year Ended June 30, 1910. Volume II. Cloth. Pp. 1373. Washington: Government Printing Office, 1911.

Nineteenth Annual Report of the Board of Health, City of Spokane, Wash. For the Fiscal Year Ending Dec. 31, 1910. Paper. M. B. Grieve, Secretary.

The Chemistry of Synthetic Drugs. By Percy May, B.Sc. (London). Cloth. Price, $2.25 net. Pp. 229. New York: Longmans, Green & Co., 1911.

The John Crerar Library: Sixteenth Annual Report for the Year 1910. Paper. Pp. 66. Leonard A. Busby, Secretary. Chicago, 1911.

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THE CAUSE OF INFLAMMATION OF CRANIAL NERVES AFTER THE USE OF SALVARSAN

A PLEA FOR THE INTRAVENOUS METHOD

JAY FRANK SCHAMBERG, M.D.
PHILADELPHIA

The new remedy, salvarsan, introduced by Ehrlich and Hata, has now been used in over 50,000 cases. It is conceded by all to be the most effective drug in syphilis known to medical science. Used properly in appropriate cases, it is as safe as most other potent remedial agents. Ehrlich regards salvarsan as less poisonous than mercury, if cases of heart disease and severe cases of paralysis are excluded.

The only disturbing results that have been reported after the use of salvarsan are occasional inflammation of cranial nerves, particularly of the optic and auditory nerves. Relative to the number of cases treated, the incidence of such complications has been very small, probably not one in a thousand.

It is probable, however, that some cases have occurred that have not been placed on record. Furthermore, the seriousness of such complications makes it imperative that their cause be thoroughly studied. Ehrlich has kept thoroughly in touch with these complications, and with all the evidence in his possession, he denies any etiologic relationship between the use of the drug and the development of the neuritis. He regards them all as cases of *neuro-recidiv*, i. e., fresh syphilitic neuritis.

There are a number of able clinicians abroad, however, who are not willing to exculpate the drug as a causative influence.

CASES OF OPTIC NEURITIS REPORTED

Professor Finger,[1] of Vienna, a noted syphilologist, has reported four cases (*the first four following*) of optic nerve disturbance:

Case 1.—Robust 19-year-old girl with initial lesion and beginning roseola. Infection eight weeks before. August 2, 1910, she received 0.45 gm. of salvarsan intragluteally. Prompt regression of lesions and negative Wassermann on September 20. October 5, she returned with headache, visual disturbance, vertigo, right-sided oculomotor paresis and beginning left optic neuritis. October 12, she was given 0.45 gm. salvarsan subcutaneously, in acid solution. October 28, mercury and iodids administered without result: neuritis of the right optic nerve set in.

Case 2.—Girl, 19 years old, with lues of two and one-half months' duration. July 20, 1910, she received 0.4 gm. salvarsan in neutral suspension. By August 5, regression of all lesions had occurred, but returned October 18, with visual disturbances and abducens paresis.

Case 3.—Girl, 22 years old, who had been treated for malignant lues, with mercury and iodids and thirty injections of arsacetin and eighteen of enesol. July 6, 1910, the patient received 0.4 gm. salvarsan for gummata of nose and pharynx. September 5, three months later, symptoms of beginning optic atrophy with visual disturbances, sluggish pupils and contracted fields were present.

Case 4.—Man, 28 years old, with lues of five months' duration. Aug. 8, 1910, received 0.45 gm. of salvarsan. October 3, the Wassermann reaction was negative. He returned Nov. 10 with a chorioiditis of the right eye.

Case 5.—Kowalewski,[2] of Berlin, reported the case of a 28-year-old woman, injected with salvarsan in the spring of 1910, for an early syphilid. Rapid improvement. In July symptoms of luetic meningitis and neuritis optica developed. The employment of mercurial inunctions was followed by a rapid cure.

Blaschko[3] reported before the Berliner dermatologische Gesellschaft, Dec. 13, 1910, a second case of neuritis optica which he had observed after injections of salvarsan. He stated that the cases were different from the toxic optic atrophy encountered after atoxyl.

Held, at the same meeting, likewise reported a case of optic neuritis after salvarsan.

Rille,[4] of Leipsic, reported two cases of optic neuritis in association with auditory disturbances after salvarsan, and a third case of auditory disease alone. These will be referred to later.

In the discussion following the reading of Finger's paper, November 18, 1910, before the Royal Medical Society of Vienna, the following cases were reported:[5]

Oppenheim, out of sixty-four cases, observed one case of optic neuritis treated with salvarsan for secondary lues.

Nobl saw no injurious results among seventy-two patients.

Von Zumbusch, out of 300 cases, observed one of optic neuritis, which improved under mercury and then relapsed. A short time before he had seen a similar case which occurred in a patient treated only with mercurial injections.

Dimmer treated many eye lesions, including seven cases of iridocyclitis luetica, with salvarsan, with very good results. In one case there was a recurrence with severe papilloretinitis.

Doerr had uniformly good results in 270 cases.

Carl Stern[6] reports cases of oculomotor palsy after subcutaneous injections of salvarsan. Stern has observed three cases of oculomotor paralysis in 200 patients treated with salvarsan. The patients had negative Wassermann reactions.

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[1] Wien. klin. Wchnschr., 1910, No. 47.

[2] Berl. klin. Wchnschr., Nov. 21, 1910, p. 2141.

[3] Monatsh. f. prakt., Dermat., lii, No. 2, p. 70.

[4] Berl. klin. Wchnschr., 1910, No. 50.

[5] Abstr. in Monatsh. f. prakt., Dermat., 1911, lii, No. 6, p. 308.

[6] Deutsch. med. Wchnschr., Jan. 5, 1911, p. 15.

Case 6.—Fordyce[7] reports the case of a physician with a digital chancre and secondaries, who received 0.6 gm. of salvarsan Oct. 7, 1910. In November, he suddenly developed a choked disk. Fordyce also reports a similar case which developed while the patient was under mercurial treatment and which was cured with salvarsan.

Case 7.—Schamberg[8] reported the case of a woman, aged 29, who presented herself Nov. 10, 1910, with a general macular eruption of three months' duration, with persistent headaches during this period. Wassermann reaction + + +. November 11, she received 0.45 gm. of salvarsan in neutral suspension subcutaneously. On the following day she said the "misty vision" (of which she had not previously spoken) and the headache had disappeared. Gradual disappearance of the eruption. She returned December 28, complaining of severe headaches, vertigo, vomiting and loss of vision in right eye, with some dimness in left. Dr. George E. de Schweinitz, who examined her, reported choked disk with retinal hemorrhage, and almost no vision in right eye, with beginning involvement of left. She was later vigorously treated with mercury and iodids by Dr. Howard Hansell and on discharge from the hospital was greatly improved, having 20/40 vision in right eye and 20/30 in left.

AUDITORY NERVE DISTURBANCE

Finger reported the three following cases (8, 9, 10):

Case 8.—Man, aged 22. Cutaneous syphilis and periostitis. Aug. 24, 1910, 0.5 gm. neutral salvarsan injected. Next day nystagmus, dizziness, typical falling symptoms; normal hearing. Diagnosis, vestibular nerve disturbance. Complete recovery in a few days.

Case 9.—Man, aged 25. Syphilis of six weeks' duration. Aug. 27, 1910, 0.45 gm. salvarsan injected subcutaneously. Later negative Wassermann. Nine weeks after injection, dizziness and deafness developed. Diagnosis, bilateral labyrinthine deafness. Conditions remained unchanged.

Case 10.—Girl, aged 18. Syphilis of three months' duration. Aug. 5, 1910, 0.45 gm. salvarsan injected subcutaneously. November 3, complained of dizziness and headache. Diagnosis, labyrinthine deafness, dizziness and spontaneous nystagmus. No improvement by Nov. 27, 1911. Wassermann negative.

Case 11.—Dr. H. Frey[9] reported a case of deafness and some vestibular nystagmus in a patient injected Aug. 9, and returning in October with the above mentioned symptoms. He had treated 100 patients with salvarsan.

Rille reported three (12, 13, 14):

Case 12.—Woman, aged 21, with early syphilis. Injected July 7, 1910, 0.45 gm. salvarsan. Four weeks later there developed dizziness, noises and deafness in right ear. Later partial facial paralysis. Up to Nov. 15, 1910, some improvement.

Case 13.—Girl, aged 18. Salvarsan, 0.45 gm., injected July 10. Oct. 10, headaches and dizziness, and on following day right-sided facial paralysis, followed in three days by optic neuritis. Under mercurial inunctions, the facial palsy and other symptoms disappeared. Patient cured.

Case 14.—Man, aged 32. July 7, injection of salvarsan. In middle of October, high-grade double labyrinthine disease developed.

In the discussion following the reading of Finger's paper, the following cases were reported:

Kren examined eighty-nine of 140 patients treated with salvarsan in Riehl's clinic. In one case two months after the injection there was a slight labyrinthine impairment of hearing, with a negative Wassermann.

Urbantschitsch examined the ears of sixty patients treated by Finger, Riehl and Ehrmann and observed five cases of suppression of function of the vestibular nerve, which developed shortly after the injection and rapidly disappeared.

Matzenauer had one case of auditory disturbance in 126 cases.

Ullmann treated sixty-two patients without any complications.

Rusch observed a case of severe involvement of the auditory nerve two months after the use of salvarsan.

Finger reported one additional case of auditory nerve disease, Beck a case of one-sided deafness from the clinic of Zumbusch and one case of vestibular disease was seen by Zechmeister of Sarajewo.

Alexander,[10] of Vienna, reports the following case (15) of a patient treated by Nobl:

Case 15.—Woman, aged 30, contracted syphilis in the spring of 1910, received injections of mercury and at the end of July complained of deafness and tinnitus in right ear. This was later cured. In October trouble with left ear began, which was treated with salvarsan. In November left ear grew worse and ended in complete deafness.

Case 16.—Dr. George L. Richards,[11] Fall River, Mass., refers to two patients of Dr. Daniel Kaufman, who had deafness and labyrinthine symptoms some time after injections of salvarsan. Wassermann positive. Under mercurial injections, the symptoms were improving.

Case 17.—Zeissl,[12] of Vienna, saw a patient who developed facial palsy and tinnitus. The patient received salvarsan intraglutealiy August 7. November 7, the facial palsy developed.

Case 18.—Paul Lazarus[13] had a patient in whom left-sided labyrinthine disease with tinnitus and deafness developed three days after an injection. In some days this disappeared.

Von Zumbusch found in the literature among 7,000 cases of patients treated with salvarsan in twenty-five clinics, nine cases of auditory nerve disturbance. All were cases of syphilis between the second and the seventh month. In most cases the Wassermann reaction was negative.

There are doubtless other cases of optic and auditory neuritis that have been reported, which have escaped my search. While the detailed references to these cases give perhaps an alarming impression, it is perhaps well to state that the entire number of cases of optic and auditory disease here abstracted is not over twenty-five.

EHRLICH'S COMMENTS

In September, 1910, Ehrlich[14] addressed an inquiry to a large number of clinicians, and determined that not a single case of blindness had occurred among 8,000 patients treated with salvarsan. Since that time one case of retinal atrophy has occurred (Case 3 of Finger), and this patient had had almost a year's prior treatment with arsenical preparations, such as arsacetin, enesol, etc. Ehrlich believes that a hypersusceptibility to arsenic was thus established. A large number of observers including Deutschmann, Gross, Havan, Ogersheimer, Römer, Schanz, Wechselmann (1,400 cases) and Seeligsohn have reported good results in the treatment of luetic ocular conditions. They did not observe any bad effects even in optic atrophy. In syphilitic retinal conditions, splendid results were often obtained. Ehrlich states that salvarsan itself has no injurious effects on the eye.

In regard to auditory disease, Ehrlich made an inquiry of twenty-five clinicians who had treated 7,000 patients with salvarsan: but nine cases of auditory nerve disturbance had been encountered.

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[7] Fordyce, John A.: The Modern Treatment of Syphilis, with Reference to the Recent Synthetic Preparations, The Journal A. M. A., Jan. 21, 1911, p. 186.

[8] Univ. Penn. Med. Bull., January, 1911.

[9] Wien. klin. Wchnschr., 1910, No. 50.

[10] Alexander: Boston Med. and Surg Jour., March 9, 1911.

[11] Boston Med. and Surg. Jour., March 9, 1911.

[12] Wien. med. Wchnschr., 1911, No. 7, p. 439.

[13] Deutsch. med. Wchnschr., Jan. 26, 1911.

[14] München. med. Wchnschr., Jan. 3, 1911.

LUETIC OPTIC AND AUDITORY NEURITIS BEFORE THE USE OF SALVARSAN

A careful study of the reported cases of optic and auditory trouble following the use of salvarsan leads convincingly to the conclusion that all, or nearly all, of these cases were instances of syphilitic neuritis or *Neurorecidiven*, as they have been called abroad. In proof of this is the fact that many have been improved or cured by mercury and the iodids or a second dose of salvarsan. The important question is whether the salvarsan employed has been a determining factor in their development.

ARE CRANIAL NERVE INFLAMMATIONS COMMONER AFTER SALVARSAN THAN AFTER THE OLD TREATMENT OF LUES?

On this question there is difference of opinion. The known injurious effects of atoxyl and similar substances on the cranial nerves led Ehrlich at the outset to warn against the use of salvarsan in optic nerve conditions. With increasing experience he became convinced of the harmlessness of the new remedy.

Finger, Alexander, Rille and others feel that cranial nerve complications are more commonly seen now than under former methods of treatment. Professor Alexander, the Vienna otologist, states that in the course of six years before salvarsan, he had seen only twelve cases of ear disease in the early stages of syphilis. According to him, acute neuritis of the auditory nerve in early syphilis is very rare.

On the other hand, Professor Urbantschitsch, of Vienna, had previously called attention to disturbances of the optic and auditory nerves after the use of soluble mercury salts.

Jansen, of Berlin, stated to Ehrlich that auditory nerve trouble is by no means rare in recent syphilis. He had obtained further improvement from second injections of salvarsan in such cases.

Paul Lazarus[15] says that latent vestibular disease in luetics is commoner than is believed.

Kreibich[16] saw in Graz in one year, four cases of luetic recurrence affecting the auditory nerve, before the introduction of salvarsan; in Prague in four years he had seen only two cases.

Benario, of Frankfort,[17] in view of Finger's reports, searched through a part of the case reports sent to Ehrlich, and utilizing only those with exhaustive data, found seven cases (Cases 19 to 24, and 28) of auditory nerve disturbance before the use of salvarsan. In addition, data concerning three other cases (Cases 25, 26, 27) were communicated in letters. All were early cases.

Case 19.—Woman, aged 23. Mercury salicylate injections. Complete deafness in one ear and partial in other; oculomotor palsy. After two injections of salvarsan, complete cure.

Case 20.—Man, aged 27. Mercurial treatment. Facial and auditory palsy three months after infection. After salvarsan, disappearance of symptoms in three days. Brilliant result.

Case 21.—Woman. Received forty mercurial injections; six months after infection, facial palsy, almost complete deafness, diplopia and ptosis. (Disappearance of facial palsy under mercury). After salvarsan, improvement in hearing and disappearance of diplopia.

Case 22.—Man, aged 22. Forty mercurial injections. Five months after infection, right-sided facial palsy and deafness in right ear. No improvement in hearing after salvarsan.

Case 23.—Man. Six injections of insoluble mercury salts. One month after infection almost complete deafness. Following use of salvarsan, gradual restoration of hearing to normal.

Case 24.—Woman, aged 39. Eighteen injections of salicylate of mercury. About three months after infection, partial deafness in both ears; could not hear conversation Ten days after salvarsan, great improvement. At time of last report, hearing normal.

Case 25.—Woman, aged 34. Three months after infection, partial deafness. After use of salvarsan, rapid improvement. At present, hearing normal.

Case 26.—Woman, aged 30. Eight mercury injections. Several months later, labyrinthine disease (tinnitus, partial deafness, vertigo). Cure under mercury.

Case 27.—Complete deafness during secondary stage. Could not hear pistol shot. Mercury used without results. Improvement under salvarsan. Can now hear loud conversation.

Case 28.—Reported by Professor Unna, of Hamburg (Unna: *Monatsh. f. prakt. Derm.*, 1910, li, No. 12). Musician developed during the remission period impaired memory, failure of concentration, tinnitus and impaired hearing. Patient had previously had mercurial treatment. After an injection of salvarsan, all the symptoms disappeared except the one most important to the patient, namely, his deafness, but this was gradually cured in the course of a number of weeks.

Becker,[18] in 1907, found among 200 syphilitics in the early period, 6 per cent. of cases of optic neuritis.

Fehr, of Berlin, examined the eyes of a large number of Wechselmann's patients and stated that before treatment he found 2 to 3 per cent. of cases of neuritis, choked disk and retrobulbar neuritis without subjective disturbance.

Wechselmann says that among more than 1,400 patients treated with salvarsan, he did not observe any ocular trouble, although ophthalmic examinations were pretty generally carried out. In two cases, there were temporary "floating specks."

RESULTS OF TREATMENT

In a considerable number of cases, the optic and auditory trouble has improved or cleared up under the use of antisyphilitic remedies. Patients with neuritis occurring spontaneously or after mercury have often done well under salvarsan or further mercurial treatment, and in cases occurring after the use of salvarsan the patients have often improved under a second dose or under mercury and the iodids.

Marshalko[19] says beginning optic atrophy is no contra-indication to the use of salvarsan if the drug is otherwise indicated. After consultation with Professor Imre, director of the Eye Clinic in Klausenberg, Marshalko injected a number of such patients. No injury occurred in any case; indeed, the process became stationary in some, and in others there was apparent improvement. These results prove that the neuritis is not a primary toxic condition, but a fresh syphilitic involvement, a conclusion most pertinent to this discussion.

Another point of interest is that in all or nearly all of the cases reported the patients have been in the early stage of syphilis, between the second and eighth month after infection. This is additional evidence of the luetic nature of the process.

Furthermore, all of the cases have occurred after the subcutaneous or intragluteal use of mercury and none, so far as the reports go, after the intravenous administration.

This is most suggestive in view of the fact that the intravenous administration is the most intensive method of treatment. Furthermore, among those clinicians who have used the largest doses of salvarsan (Gennerich, Duhot, Weintraud) neuritic disturbances have not been observed.

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[15] Deutsch. med. Wchnschr., Jan. 26, 1911, p. 186.
[16] Deutsch. med. Wchnschr., Jan. 5, 1911, p. 11.
[17] München. med. Wchnschr., Jan. 3, 1911, p. 20.
[18] Quoted by Riehl: Wien. klin. Wchnschr., 1910, No. 51.
[19] Deutsch. med. Wchnschr., Feb. 2, 1911, p. 199.

THEORIES AS TO THE CAUSE OF THE COMPLICATIONS

Abstracting the views of various men, the following propositions may be formulated:

1. The optic and auditory nerve trouble is syphilitic in character and may occur spontaneously or after mercury or salvarsan, and is unrelated to the latter (Ehrlich).
2. These complications are syphilitic, but in some way related to the administration of salvarsan, perhaps due to the traumatic effect of the drug on the nerves (Finger, Rille et al.).
3. When occurring early, it is suggested that the complications may be an effect analogous to the Herxheimer reaction (Urbantschitsch, Pincus, et al.).
4. It is believed by some observers that the introduction of salvarsan in "depots" in the subcutaneous or muscular tissues, where much of it may remain and undergo chemical change, may be responsible for a toxic effect on nerve structure.
5. I believe that an important factor in many cases in the production of the neuritic complications has been the cessation of treatment after a single subcutaneous or intramuscular dose of salvarsan; so much was anticipated concerning the radical curative effects of salvarsan that no subsequent treatment was given for months. In sixteen cases in which the dates of the administration of the salvarsan and of the development of the neuritis are given, between two and three months elapsed in twelve of the cases. In a very few cases, it must be admitted, the complications have arisen within a few days. In these cases it is suggested that the condition may be analogous to the Herxheimer cutaneous reaction. If the neuritic manifestations are commoner after salvarsan than after mercury, the discontinuance of treatment may account for the difference, for mercurial treatment is continued for a much longer period of time. If subcutaneous and intragluteal injections are administered they should be followed in a short time by other treatment. It is reasonable to believe that this would in large part prevent the neuritic inflammations, as they are as a rule favorably influenced by the readministration of treatment.

A PLEA FOR THE INTRAVENOUS USE OF SALVARSAN

Not only is the intravenous administration of salvarsan infinitely less painful than the subcutaneous or intragluteal methods; not only does it obviate the liability to tumefactions, abscesses, and necrosis of tissue, but it is decidedly more effective.

Schreiber, of Magdeburg, who has used intravenous injections, and at times reinjections, in over 800 cases, has observed only four recurrences. In the early period when he employed intramuscular injections, he encountered seventeen recurrences out of a relatively small number injected.

Writing in October, 1910, Schreiber[20] said that in over 400 patients treated intravenously, he had observed no untoward effects on the eyes.

A. Frankel[21] states that an intravenous injection cured a patient with tertiary lues of the skin whose case had not been influenced six weeks before by an intramuscular injection.

In my own experience, I have found the intravenous injections to be distinctly more efficacious than the treatment by other routes. To be sure, subcutaneous or intragluteal injections will often effect a disappearance of the lesions, but this does not teach us the extent to which the underlying disease has been influenced.

It is proved that recurrences are much less early and less frequent after intravenous injections than after administration by other methods. It appears also that inflammations of the cranial nerves have only occurred after intramuscular and subcutaneous injections, therefore, the superior advantages of the blood route over other methods seem to be established.

The theoretical consideration that elimination is more rapid after intravenous injections should not weigh as an argument against the determined clinical results. Arthur Bornstein[22] has shown by experimental research on animals, that the largest part of the dose of salvarsan administered intravenously does not remain free in the blood, but is deposited in the liver, spleen and kidneys.

CONCLUSIONS

1. Inflammation of the optic, auditory, facial and other cranial nerves has developed in a minute percentage of cases after the use of salvarsan in syphilis.
2. The same complications may occur spontaneously or after the use of mercury.
3. Whether the incidence of such neuritic complications is larger after salvarsan than after mercury is a mooted question, on which foreign specialists are not agreed.
4. These inflammations have occurred almost exclusively in cases of recent syphilis.
5. They appear to have occurred exclusively after intramuscular and subcutaneous injections and not after the intravenous administration.
6. Optic and auditory neuritis have in many instances cleared up under a second dose of salvarsan or under mercury and the iodids.
7. Most of the cases of neuritis have occurred two to three months after a single injection. A risk is incurred in discontinuing antisyphilitic treatment for a long period in early syphilis, after a single injection of salvarsan, particularly when given subcutaneously or intramuscularly. It would be, of course, likewise dangerous to cease treatment after brief mercurial administration.
8. The intravenous method of treatment has many advantages over the treatment by other routes.

1922 Spruce Street.

Intestinal Surgery.—The present-day success of intestinal surgery is due largely to careful observations of conservative clinicians. Great progress was made when surgeons had a fair understanding of bacteriology and biology and a clearer conception of the vital processes in connection with all lesions within the abdomen. The part played by the peritoneum in connection with infection within the abdominal cavity and the repair of wounds of the intestines is now known and has greatly modified surgical technic. The study of phagocytosis, antibodies and opsonins in the blood has enlarged the surgical horizon. The elimination of all possible bacteria from the alimentary canal previous to the operation and the strict observance of asepsis at the time of operation has greatly increased the possibility of success in intestinal work.—A. E. Benjamin, in *Lancet-Clinic.*

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[20] Deutsch. med. Wchnschr., Oct. 13, 1910, p. 1899.
[21] Deutsch. med. Wchnschr., Jan. 26, 1911, p. 18.
[22] Deutsch. med. Wchnschr., Jan. 19, 1911, p. 112.

IMPERMEABLE CARDIOSPASM SUCCESSFULLY TREATED BY THORACOTOMY AND ESOPHAGOPLICATION

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The operative method carried out in the case described below may be of interest, and perhaps also of some practical value.

History.—R. M., a woman, aged 47, sick for fifteen years with typical symptoms of cardiospasm, with frequent regurgitation, became worse gradually; she was treated by a number of physicians, but the cardia was never dilated; of late the patient had been unable to swallow anything. The patient entered the medical division of the German Hospital (Dr. M. Einhorn). Neither sounds nor dilator could be made to pass into the stomach; they evidently slipped sideways into an esophageal pouch, which rested on the diaphragm. Metal sounds passed down a distance of 17¼ inches from the teeth before they met resistance (14 inches being the normal distance in grown persons); flexible tubes could be made to pass 1½ inch further down. Rectal feeding had to be resorted to, but soon had to give way to a gastrostomy according to Kader's method (Dr. M. Rehling). Operation was well borne, and the patient was instructed to chew her food, but instead of swallowing it, to spit it into a receptacle partially filled with some kind of nourishing fluid, from which it was then poured into the stomach. In spite of this she did not gain and asked to be relieved by operation.

The proposition made to her to let me try first to pass the contracted cardia with the help of the esophagoscope was refused, and was not particularly pressed in view of the unfavorable results obtained by others in cases of such long standing. An attempt was made, however, to pass the cardia from below, for which purpose the stomach was washed clean and direct gastroscopy performed with the electric cystoscope introduced through the gastric fistula. Owing to the lack of proper landmarks I did not succeed in definitely locating the cardia, an experience I had frequently had before in similar cases; nor was I able to pass a ureter catheter by means of the ureter catheterizing cystoscope, although at one time a metal probe had been introduced through her mouth down to the obstruction, and this, as well as the ureter cystoscope, had been made visible with the help of the fluoroscope, the *x*-ray tube being placed at the back of the patient for the purpose of locating the cardia. The failure was evidently due to the fact that the cardia proper could not be pressed forward by the sound.

After consultation with Dr. Einhorn I decided to perform thoracotomy under differential pressure and, if the diffuse esophageal pouch demonstrated by the *x*-rays should be found to be due to cardiospasm and not to a carcinoma which might have developed on the basis of an old ulceration, I would then try to reduce its diameter by esophagoplication. Excision of a large ellipsoid piece of the entire length of the esophageal wall with immediate suture would have been a more radical step. However, such an operation would have involved greater risk than it seemed wise to take in view of the patient's greatly reduced condition; she weighed 87 pounds.

Operation.—May 31, 1910, operation was performed under positive differential pressure by means of the positive chamber in use at the German Hospital since April, 1909. Stomach lavage was first performed, the gastric tube removed and the fistula packed with iodoform gauze and covered with zinc adhesive plaster. The patient was given a hypodermic injection of morphin ⅙ gr., atropin 1/100, and, by hypodermoclysis, 1,000 c.c. saline solution. Anesthol anesthesia was employed, with two narcotizers in the chamber, with oxygen tank and esophageal sounds. The thorax was put on the stretch by means of the new operating-table for thoracic surgery elsewhere described,[1] a curved incision was made over the sixth to the tenth ribs, exactly corresponding in direction with the lower part of the typical Schede incision, and a skin and muscle flap raised. An incision was then made in the eighth intercostal space. The lung was superficially injured on dividing the pleura because of a total adherence of the lung to the costal pleura. Careful blunt dissection was done and the incision lengthened anteriorly and posteriorly. The wound was then gently separated and the rib-spreader inserted, but, in order to avoid rib fracture, wide separation was not forced. Separation of the lung from the costal and diaphragmatic pleura posteriorly proved easily feasible. A number of double ligatures, with divisions between, were needed for firm ligamentous bands. When the lung was pushed off from the anterior mediastinum it tore at two places, which were temporarily covered with moist gauze sponge. When the loosened lung (which remained adherent inwardly) was pushed upward and inward, away from the diaphragm and aorta, a large pear-shaped swelling was seen, corresponding to the lower end of the esophagus. This evidently was the sac in which the instruments had been caught. The overlying pleura was split, the pneumogastric nerves made out and thoroughly separated from the esophagus on either side for fully five inches. The sac was loosened all around with both hands until the finger-tips met posteriorly at the spinal column. The cardia was palpated through the diaphragm and found not infiltrated and could be pulled into the thorax for a distance of about one inch without opening the abdominal cavity, a phenomenon also observed in previous cases. The cardia was surrounded by the finger, then by a piece of twisted gauze, the ends of which were clamped. This gave a good hold. The tip of a long flexible sound now introduced into the esophagus was felt in the pouch posteriorly and laterally over the spinal column. It was lifted by the left hand, which rested behind the esophagus, and met by the right in front which guided it toward the cardia, the latter resting on the gauze handle. The sound passed the cardia nicely, its upper end being gently pushed by the narcotizer. This proved conclusively that the cardia was permeable to instruments.

The sound being withdrawn, a double esophagoplication was done, the same as is done when performing gastrotomy according to Kader. Interrupted silk sutures, flat curved needles and the indispensable "Küster's swan" were used,[1] care being taken not to penetrate the esophageal wall and not to include the pneumogastric nerves. Meanwhile an intravenous injection of saline with 20 mm. of adrenalin had become necessary. The esophagus was then dropped back into its normal place and the initial lung incisions and tears stitched with a straight round needle threaded with fine silk, grasping just enough of the pleura to close the wound. Suture of the rents near the mediastinum were technically difficult or impossible and a small flap of parietal pleura just hanging handy was stitched on to the lung to cover one of the rents. Air was thought to be heard passing out of the lung now and then. Closure of the thoracic wound was then undertaken. Two pericostal silk sutures, tied, held the ribs in proper apposition until three double chromicized catgut retention sutures, made to pass through drill-holes in the middle of the lower rib and surrounding the upper one were tightened. Then the silk sutures were cut and removed. The external wound was closed with continuous catgut sutures and the dressing applied. The patient was removed from cabinet and returned to bed; pulse was 108; stimulation was employed.

Postoperative History.—On the following day at noon there was cyanosis and dyspnea, a pulse of 140 and increased respiration. Diagnosis: compression of lung by fluid or air, which latter, it was thought, might have escaped through the pulmonary tear that could not be sutured. To make sure of this, the patient was brought back to the cabinet and the pressure turned on, with everything ready to reopen the wound in case of increase of dyspnea, which would indicate the presence of a pressure pneumothorax. Fortunately, this did not happen, and, as the patient felt comfortable under differential pressure and complained of difficulty in breathing the moment it was stopped, she was left in the apparatus for almost ten hours, food being given frequently through the tube which had been reintroduced through the gastric fistula. When the head was removed from the chamber at 9 p. m. and the patient placed in an upright position, her lips were red as before, and pulse unchanged. She was then brought back to her bed and went on to recovery.

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[1] Ann. Surg., July, 1910, p. 40.

Interesting points during convalescence were:

1. Accumulation of about one pint of turbid sanguinolent serum, which necessitated drainage on the twentieth day after operation; rib resection was done under cocain, making use of the lowest part of the curved skin incision.
2. A hematogenous infection of the right (movable) kidney, with perinephritis.
3. Spontaneous return of the ability to swallow any kind of food, not only liquid, but also solid.

In the fourth week after operation in this case, sudden dysuria with fever and local tenderness over the right kidney set in; the urine contained pus. As catheterization had not become necessary at any time after operation, and patient had been free from urinary trouble before, we had to diagnose a hematogenous infection. Medicinal treatment was resorted to. Subsequently the infiltration was very much reduced, the urine clear and bilaterally normal, as proved by ureteral catheterization. Evidently a cortical abscess had perforated into the perinephritic fat.

In the third week after the operation, during a very hot night, the patient drank a whole glass of water, passing it into the stomach without any trouble. So far she had been fed exclusively through the gastric fistula and had been warned not to make use of the esophagus for feeding purposes. One week later semisolid, and soon thereafter, solid food passed through the cardia without any difficulty. This favorable condition continued unchanged since the middle of June, 1910, that is over six months, and may, therefore, be considered a permanently established feature. Later, six and a half months after the operation, the patient was absolutely well.[2] The wound remained definitely closed since the middle of July, 1910. The patient swallows her food with perfect ease; there is never any difficulty in deglutition, nor the slightest tendency to regurgitation. She weighs 118 pounds against 87 pounds before the operation, and is gaining steadily. At times there was a slight rise of temperature due to the still present perinephritic infiltration.

The cure of the impermeable cardiospasm in this case seems to have been due, first, to the forcible separation of both pneumogastrics from the esophagus, tearing the many tiny nerve fibers that enter the muscularis of this organ on either side; second, to the artificial reduction of the circumference of the pouch.

It had been the intention to sound the esophagus soon after the operation and if the tube passed the cardia, to try the dilator and distend the contracted muscular ring. This became unnecessary, as the desired condition set in spontaneously.

A direct operative attack on the cardia for spasm was first undertaken by the late von Mikulicz. He stretched the cardia with forceps through a gastrotomy wound. Wendel performed osteoplastic resection of the costal arch, following this by a plastic operation according to pyloroplasty by the Heinecke-Mikulicz method.

As an after-effect of thoracic operations on the human subject, it has been a frequent observation by other surgeons, as well as myself, that an effusion of a serous or serosanguinolent fluid takes place into the pleural cavity operated on, and that aspiration of this fluid does not overcome the dyspnea. In the majority of cases the accumulation of this fluid has been the cause of death, or at least has materially contributed to the death. This fact appears to justify the conclusion that the future of thoracic surgery rests on the development of a proper after-treatment. I have thus expressed myself in various medical societies and note from a recent article of Wendel's that he has come to the same conclusion. Air-tight closure of the thoracic cavity whenever possible after the intrathoracic work is finished, has been the advice given by other workers in this field. In the light of the experience gained in this case, however, as well as that which I have had in several other thoracic operations, it seems to me that this dictum may have to be changed or modified. Instead of using air-tight closure, I think it will be necessary for us to learn how to drain the thorax during the first twenty-four hours, perhaps even thirty-six or forty-eight hours, after a severe thoracic operation, without incurring the dangers of a pneumothorax.

Several ways of fulfilling this desideratum come to mind. One of them is the use of the chamber. The head of the patient is kept within the chamber under pressure and tubes drain the thoracic cavity or cavities into the aseptic dressing which has been applied. Relays of assistants and nurses attend to the needs immediately after operation.

Another procedure would be to apply a sort of valve dressing permitting of drainage.

Wendel, in speaking of operations for cancer of the cardia, expresses the intention of draining internally into the abdomen or through the abdomen to the surface after a combined thoracic-abdominal operation.

As soon as the patient has satisfactorily passed the first twenty-four to forty-eight hours and the pleura has ceased to secrete, the drain or drains may be withdrawn and, under increased differential pressure, the wound covered with rubber tissue and a large dressing, closing the thorax air tight.

Should equally favorable results be obtained with the above-described procedure in subsequent similar cases a new method of radical cure of impermeable cardiospasm by the most direct route would then be established.

Note: Since I wrote the above, the patient has passed through a severe attack of influenza, January, 1911. Shortly after she had recovered from this attack, the scar resulting from the empyema reopened in one place and gradually an esophageal fistula established itself, producing some leakage through the fistula. Evidently one or more of the silk sutures in the esophageal wall caused a perforation, swallowing meanwhile continuing with perfect ease. This experience teaches that chromicized gut should be used rather than silk for sutures and ligatures within the thorax, if we are unable to guarantee aseptic wound healing.

700 Madison Avenue.

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[2] The patient was presented before the New York Surgical Society, Nov. 23, 1910.

CARDIOSPASM

REPORT OF A CASE: TREATMENT BY OPERATION AND SUBSEQUENT DILATATION

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There is little about cardiospasm found in text-books, and until recently almost nothing in periodical literature. Within the past few years, however, a great deal of attention has been attracted to it, especially in Germany, and the facts stated by careful observers, there and elsewhere, who have been on the alert to detect cases of cardiospasm, would seem to justify the assertion that many of us are overlooking some, and perhaps many, patients affected with this condition.

H. S. Plummer of St. Mary's Hospital, Rochester, Minn., reported forty cases.[1] Only four of his patients were treated by operation, the simpler method of dilatation being sufficient to effect a cure.

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[1] Plummer, J. A.: The Journal A. M. A., Aug. 15, 1908, p. 549.

It might be well at this point to define cardiospasm. *Cardiospasm* is a condition in which there is spasm of the circular fibers of the cardiac orifice or esophageal opening of the stomach; dilatation and retention of food in the esophagus, with periodical regurgitation. This, of course, describes a fully developed case.

The causes of the disease, as collected by Plummer in his full and valuable paper, are as follows:

"First, primary cardiospasm (Meltzer); second, primary atony of the musculature of the esophagus (Rosenheim); third, simultaneous presence of cardiospasm and paralysis of the circular fibers of the esophagus, brought about by paralysis of the vagus (Kraus); fourth, congenital disposition (Fleiner, Zenker, Luschka, and Seivers); fifth, primary esophagitis (Martin); and, sixth, kinking at the hiatus esophagi."

This observer in discussing the causes of the disease says:

> In the study of a considerable number of cases the almost invariable history of a spasm at the onset, followed at a later period by the evidence of dilatation—that is, retention of food in the esophagus—is most convincing evidence that the spasm precedes the dilatation, and primary atony is relatively a rare condition.[1]

While it is true that a spasm of the cardia may be due to, or associated with, lesions of the esophagus or stomach, I do not believe that it is the cause in many cases. Certainly no lesions of these organs, and no history of their previous existence, were found in the case about to be reported.

Swallowing is divided into three acts. I shall consider only the third, in which the food passes through the esophagus. Every part of the tube, as it receives the morsel and is dilated by it, is stimulated to contract: hence an undulatory or peristaltic contraction of the esophagus occurs. If we suppose the bolus to be at one particular place in the tube, it acts stimulatingly on the circular fibers behind it and inhibitingly on those in front; the contraction, therefore, squeezes it into the dilated part in front, where the same process occurs, and this travels the whole length of the tube.[2]

The esophagus does not contract in sections, as was once thought, but there is a peristaltic wave. It is usually thought that the sphincter of the cardia is tonically contracted.[3] However this may be, it is certain that contraction of the esophagus is due to the vagi; and if it is true that these nerves supply the esophagus with motor, and the cardiac sphincter with inhibitory fibers, any disturbance or degenerative changes of these nerves would produce cardiospasm. "Division of both pneumogastric nerves gives rise to paralysis of the esophagus and stomach and firm contractions of the cardiac orifice. These nerves, therefore, normally supply the esophagus with motor, and the cardiac sphincter with inhibitory fibers. If food is swallowed after these nerves are divided, it accumulates in the gullet and never reaches the stomach. While it is true that peristalsis is an inherent property of the muscle, which is normally controlled by nervous agency, it must be remembered that the nervous control is especially marked in the esophagus. . . . It seems probable that the peristaltic contractions of the esophagus, to be efficient, must be supported by nervous influences from outside. In this respect the esophagus is different from the remainder of the alimentary canal."[2]

REPORT OF CASE

History.—M. S., aged 18, unmarried, a farmer, was seen by me Jan. 20, 1910, at the request of his physician. His father had died thirteen years previously with "white swelling" of leg; his mother, brothers and sisters were living and in good health. The patient had measles in early childhood; otherwise had never been ill, and had enjoyed perfect health until the present trouble began, in 1906. He had always been in the habit of eating his meals very rapidly. One morning in 1906, having just finished eating, he suddenly experienced a choking sensation, with considerable pain, in the region of the cardia. He described it by saying that it felt as though part of his breakfast had stuck in his chest. In a short time this passed off and he ate his dinner, about three hours later, without discomfort. Attacks occurred after this about once a week, gradually increasing in frequency, with marked difficulty in swallowing. At first he was able to force all the food into the stomach, but finally part of it seemed "to stop just below the lower end of the breast-bone." The condition gradually grew worse until it would take him from two to three hours to get any considerable amount of food into the stomach. After filling the dilated esophagus, part of the food was forced into the stomach and part was regurgitated. The patient had been treated by a number of physicians without any relief whatever; was compelled to stop working on account of weakness, and because most of his time was taken up trying to eat; had lost weight slowly at first, but very rapidly of late. For the previous month or two the patient had devised a method of getting a certain kind of food into the stomach, and on this alone he had subsisted. A syrupy mixture was made by mashing a few crackers and then adding sugar and water. This was eaten, but did not enter the stomach. After this the patient would swallow solid food until he was conscious that he would regurgitate it if more were taken; then, after taking a sip of weak coffee, he would take a deep inspiration, close his mouth, shove his head forward and with slow pumping motions force the syrupy mixture into the stomach. When this method was successful he had a distinct sensation of food entering the stomach; but when it did not, the air compressed in the throat and mouth, rushed back through his mouth and nose. At other times some of the air gained entrance into the larynx, giving rise to coughing, such as is caused when one has, as is said, "swallowed the wrong way." The solid food would remain in the esophagus until regurgitated, or could be, and usually was, washed out immediately after passage of the syrupy mixture into the stomach. Living in the country, where modern plumbing facilities were not at hand, he had learned that the most convenient method of doing this was to lie on the ground beside a running stream, and after taking several swallows of water allow it to regurgitate and be carried down the stream. In this way he would wash all the retained food from the esophagus.

The difficulty of getting food into the stomach could easily be seen when the patient ate. He could easily swallow liquids or solids up to the amount of two and one-half glassfuls, or about 20 ounces, when, as he stated, he could swallow no more without regurgitating it. This material left in place for three hours could be regurgitated without difficulty, by simply stooping over until all ran out. Of course, during this time a certain amount of the liquid would seep through the cardiac orifice by gravity.

Physical Examination.—The patient was a thin but otherwise healthy-looking youth, about 5 feet 10 inches in height, and weighing 109 pounds. No abnormality could be detected by ordinary examination; urine normal; blood deficient in hemoglobin.

Diagnosis.—The two cardinal symptoms, the difficulty of getting food into the stomach, with frequent regurgitation of food and mucus, at once called attention to some obstruction above the stomach. After the history of the patient was taken, syphilis and the swallowing of caustics and foreign bodies excluded, and a general examination made, a stomach-tube was stiffened with a large esophageal bougie and introduced. The distance from the incisor teeth to the obstruction was measured and found to be 42 cm. At times the tube would pass through the cardia, not very easily on gentle pressure; at other times with great difficulty, if it could be made to pass at all. The times when it could be made to pass were very few, and then the end of the tube had to be held against the cardia for some time and considerable pressure used. That it could be made to enter the stomach, however, was proved by the entirely different character of food obtained, which showed hydrochloric acid present, and which contained partly digested food with a sour odor. After having thoroughly washed out and entirely emptied the esophagus, a thorough examination was made with the esophagoscope, which revealed no evidence of a diverticulum, new growth, ulcer, fissure or foreign body; the mucous membrane appeared normal, the esophagus large and the walls rather flaccid. Twenty ounces of potato soup containing 20 per cent. of bismuth subnitrate was given and a radiograph of the chest was made. This showed a greatly dilated esophagus, tapering to a point near the cardia. Examination of the contents of the esophagus, two days after eating meat and hard-boiled eggs, showed large pieces of undigested meat and egg and considerable mucus; there was no odor; the reaction was alkaline. There was no evidence of pepsin or hydrochloric acid. From this there seemed to be no doubt that the contents removed were from the esophagus only. Photographs of pieces of solid food were taken. The patient complained of dyspnea and slight discomfort when the esophageal sac was full, which entirely disappeared when the contents were regurgitated, or washed out.

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[2] Kirk's Handbook of Physiology, Ed. 21.
[3] Gray's Anatomy, Ed. 17.

As there seemed to be no doubt as to the diagnosis, it was decided to operate, first, in order that the patient might be fed through a tube fastened in the stomach, thereby permitting the patient to gain strength and weight; second, to allow the dilated esophagus complete rest and to contract as much as possible; and third, that the sphincter might be stretched at the same time that gastrostomy was performed.

Operation.—Jan. 28, 1910, gastrostomy was performed under ether. Witzel's method was used, except that the incision was made longer than four inches, as described in his operation. After opening the peritoneal cavity the stomach was seized, brought out of the wound, and gauze packed around it. An incision was made into the stomach wall large enough to admit the hand. One finger was introduced into the cardiac opening of the stomach and the contraction of the hypertrophied sphincter could easily be felt, resembling the contraction of the uterine cervix before thorough dilatation, preliminary to curettage. Under the control of two fingers a curved intestinal clamp, the blades of which were guarded with rubber tubing, was introduced with some difficulty into the esophageal opening. The blades of the forceps were gradually opened and closed until the cardia was fairly well dilated. No measurement of the distance between the blades was taken; the amount of force used was determined by muscular sense, care being taken not to use sufficient force to tear the esophagus. The forceps was then withdrawn, the opening in the stomach closed in the usual way, except for a hole large enough to introduce a tube with diameter equal to a number 25 French bougie. The operation was then completed according to Witzel's method.

Subsequent Treatment and Course.—Nothing worthy of note occurred immediately after the operation. Rectal alimentation was not resorted to, the patient being fed through the tube in the stomach by introducing a funnel and removing the clamp from the tube. For the first twenty-four hours nothing was given except normal saline solution, by proctoclysis, to relieve thirst. On the ninth day the superficial sutures were removed. The wound had healed by primary union and nothing remained except the fistulous opening into the stomach. In a short time the tube was withdrawn from the stomach and introduced through the fistula each time the patient was fed. At the end of two weeks the patient was up and around, and had learned to introduce the tube and feed himself, but he was not permitted to introduce any food into the stomach other than the amount and kind prescribed. During twenty-four hours the patient was allowed 3 liters of milk, 30 gm. of sugar, 60 gm. of cream and 240 gm. of thick potato soup, with 4 gm. of sodium chlorid. Tincture of ferric chlorid in water (30 minims) was also administered. Up to this time the patient had taken nothing by mouth. This diet was prepared as follows: each morning 3 quarts of milk and six eggs were thoroughly mixed, strained through cheese-cloth and put in a cool place, ready for use at regular intervals; 8 gm. of lactose, 8 gm. of sugar and 30 gm. of cream in 270 gm. water were given morning and night. Potato soup was prepared in the usual manner, and to it the sodium chlorid was added.

Regardless of this liberal diet the patient continually complained of hunger and in order to be sure that he did not increase the amount of food allowed, the tube and funnel were kept by Miss Decou, the chief nurse, who prepared his food and saw that he received it at intervals of about two hours, and to whom much credit is due for the boy's progress and ultimate recovery.

I now began to pass daily an ordinary stomach-tube which in a very short time the patient learned to pass himself without the least difficulty. Three weeks after operation the patient had gained eight pounds, felt strong and no longer complained of being hungry.

Dilatation of the cardia was then begun with an esophageal dilator made by cementing a rubber-dam balloon to one end of a non-elastic rubber tube in such a way that the tube just passed through the balloon. The end of the tube was closed with a rubber plug and a number of holes so punched in it that its lumen communicated with the interior of the balloon. A silk bag was fastened over the balloon in order to preserve its shape, when distended, and a second rubber balloon over this to facilitate the passage of the dilator. The dilator was constricted at its center, by tying silk around it, to lessen the tendency for it to slip into the stomach. The distance to the cardia having been previously found and a mark made on the tube, the dilator was then passed and the balloon distended by water forced in by an ordinary Davidson's syringe. The force used was determined by the tolerance of the patient, care being taken not to increase the size of the dilator by forcing in more water after pain was experienced. The principle of this dilator is essentially the same as that described by Plummer, from whose writing I received the idea, though his is more complete and scientific.

During the fourth week the dilatations were continued every other day, and milk and water were given by mouth, most of which readily passed into the stomach. Five weeks after the operation soft diet was permitted, by mouth, and the fistula in the stomach was allowed to heal. The esophageal sac at this time would hold only a few swallows instead of 20 ounces, which was its capacity before operation.

A radiograph showed the esophagus contracted down to nearly normal. From this time on diet was steadily increased in variety, solids being gradually added. The dilator was introduced every few days.

March 22, 1910, the patient announced that he was well and desired to return to his home in West Virginia, and, on being refused, attempted to prove, as so frequently occurs, that the doctors were not so wise as the patient. That night he celebrated a grand feast on fresh pork, potatoes, etc. At 2 o'clock the following morning I was hurriedly called and informed that "Sandy" was dying. On arriving at his room I found him in great pain, frightened, unable to speak above a whisper, abdomen rigid and greatly distended, rapid pulse, flat on his back, bathed in cold perspiration and evidently suffering from acute dilatation of the stomach. A stomach-tube was passed and the stomach was thoroughly washed out, considerable gas being set free and quantities of large pieces of undigested food were removed; in fact, some of these pieces were so large that the stomach-tube often became clogged and had to be removed to be cleared, and then reintroduced. Washing of the stomach gave almost immediate relief. An enema was then given, which was expelled soon afterwards with considerable quantities of gas.

The patient rested well for the few remaining hours of the night and arose late the next morning a sadder but a wiser boy. He stated that he had gone to the hospital kitchen the previous night and had eaten an excessive amount of food and had "bolted" it, fearing that someone would come in before he had finished.

From this time on patient improved rapidly, dilating the cardia himself about once a week.

April 11, 1910, the patient was discharged as cured. He then weighed 150 pounds and was eating all varieties of solid food. After that time I saw the patient twice and there had been no return of the disease.

I cannot assign any definite cause for this boy's trouble, unless it was some disturbance or possible degenerative changes in some of the fibers of the pneumogastric nerves. Again, it will be remembered that the patient was in the habit of bolting his food, which, it seems to me, might have caused a stretching of the lower end of the esophagus, producing a relative increase in the obstruction of the cardia. At the same time the suddenness of the onset, with intervals of absence of symptoms and increasing frequency of attacks, would point to primary spasm of the cardia with resultant dilatation of the esophagus. However this may be, the fact remains that the condition existed and has apparently been cured by operation.

The apparent rarity of this disease, the few cases reported in the literature, and especially the small number that have been operated on, seem to justify the report of this case.

In conclusion I wish to express my appreciation of the valuable assistance given me by Assistant Surgeon George F. Cottle, U. S. N., Miss Decou, Nurse Corps, U. S. N., and Hospital Steward C. P. McGarr, U. S. N., who did the radiographic and photographic work.

THE TREATMENT OF COUGH IN THE CONSUMPTIVE

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No symptom in pulmonary tuberculosis is more obvious or more annoying than the cough; now rasping and ineffectual, now milder but continuous, now paroxysmal, or again, remarkably periodical. Each variety has in its turn a rational means for relief, if its cause is but patiently sought. No symptom, probably, in any disease receives more perfunctory or rule-of-thumb therapy than this,[1] at least from others than specialists long skilled in its treatment. And yet by the simplest means the most complete and lasting benefits are often gained.

The types of cough are generally pretty well defined. Thus, in the earlier stages of the disease, most patients complain of the attack of coughing directly after getting out of bed in the morning. Here is where most practitioners err, in starting too soon their sedatives. In nearly every case, this morning clearing-up process, due probably to the change in posture, and to the change in temperature from bed to that of dressing-room, is beneficial. Unless inordinate, followed by exhaustion, or retching, which destroys all appetite for breakfast, this type may best be let alone. Where a moderate amount of secretion has collected over night, and the morning's paroxysm is unique in the twenty-four hours, it is wiser to follow the *laissez-faire* method and conserve the weapons of offense for later use. They are pretty sure to be needed.

Retching is often due to excessive pharyngeal mucus, which, hanging suspended, acts reflexly to set up vomiting. A simple gargle kept beside the bed, and used immediately on waking to cleanse the walls of the pharynx, will often clear up the condition entirely. This procedure worked remarkably well in an adult German woman in the tuberculosis ward of St. Luke's Hospital, who had coughing fits ending in vomiting every morning for months prior to her admission. Some such bland gargle as this may be used:

℞

	gm. or c.c.			
Ac. borici	30	00		℥i
Phenolis		12		gr. ii
Glycerini	8	00	or	ʒii
Aq. rosæ	4	00		ʒi
Aq. dest.	ad 240	00		ad ℥viii

M.
Sig.—Use half and half in tepid water as a gargle.

It is sometimes of advantage to have a comfortably warm dressing-room, into which the patient can step quickly before the temperature of the body, on getting out of bed, is too rapidly lowered.

Most of all, however, should be done through instruction. Mental suggestion may play a real part. The will to hold in check the cough often does more than a prescription. This is not easily inculcated in all the sick, and the end accomplished is often an excellent index of the team-work between doctor and patient. Carefully regulated breathing exercises, mild calisthenics, a series of deep, full inspirations, holding the breath several seconds, etc., are all useful aids.

In the constant dry, nagging cough which lasts off and on all day, a prolonged, systematic search should be made for local causes in the nares, pharynx and larynx. A long uvula is a prime offender.

This has often been carefully pointed out in the standard books, but is still curiously overlooked in many cases. Recently a negro presented himself for a constant cough and spitting of blood-streaked mucoid expectoration. He had a typical infiltration of the right apex; but the inordinate amount of sputum, always streaked with bright blood, demanded an explanation. He had been treated in two other dispensaries with small doses of morphin and absolute rest in bed, presumably under the notion that he was having a mild continued hemoptysis. He was found to have a long, edematous uvula which had irritated the epiglottis till it was twice the normal size. The lower pharynx, and upper larynx were deeply congested, and the sublingual tonsil was enormous. Amputation of the uvula gave him prompt relief, and checked the cough and amount of sputum briskly.

Large turbinates, adenoids, hypertrophied tonsils, and ulcers of the larynx, all demand local treatment. Occasionally cough appears to be due solely to fever. It leaves with the lowering of the temperature. Simple rest in bed generally turns the trick. Again, it is curious how much trouble a small patch of pleuritis can raise. Counter-irritation with mild (1 to 5 or 1 to 6) mustard plasters, repeated every four hours, or better still, strapping the chest for five or six days, is quite efficient. The actual cautery to the subclavicular region, a method formerly employed, is probably not used now by most practitioners; but in some cases it certainly has given relief in the past. The following has been suggested to check excessive secretion in the nasopharynx:

℞

	gm. or c.c.			
Iodini pur	0	1 to 0	3		gr. 2 to 10
Potassii iodidi	1	0 to 3	0	or	gr. 15 to 45
Glycerini	10				℥ 3

M. Sig.—Paint the nasopharynx every day or every other day.

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[1] Brown, L.: A System of Medicine (Osler), iii, 400.

Often no obvious local cause can be found which will account for the incessant, dry cough. Here again, suitable occupation and stimulation of mental interest should be tried. This can be carried out exceptionally well in sanatoriums or day camps. It is a matter of daily observation, let us say in the theater or lecture room, that as soon as the interest of the audience lags for a few moments, short irritable fusillades of coughing can be heard in all parts of the room. They disappear, as by magic, with renewed excitement or heightened interest. A similar phenomenon can be observed at any time when numbers of consumptives are sitting together. While a visitor or nurse reads aloud from an absorbing story there is complete and grateful quiet. This can be maintained ordinarily at will, by skilfully contriving to occupy the attention and imagination of the sick. It is no small task to keep renewing their flaccid energies, through diverse means of manual employment (puzzles, knitting, the jig-saw, sloyd, etc.).

Another distinct type of cough is that which occurs after eating. This is presumably due, reflexly, to the dilatation and sudden activities of the stomach walls. Its most obvious and most efficient means of control is in small, more frequent meals. The dietary should depend wholly on the general conditions present. But a more concentrated meal repeated as often as the digestion will stand, or the general needs seem to warrant, will obviate the seizure which in a large percentage of cases succeeds in setting up enough vomiting to remove most of the meal. In some cases the assumption of the upright posture for eating, after reclining all the morning, seems to be the cause. It is a good plan to have a tray taken to these patients, and the small meal eaten slowly, avoiding carefully any change in position. A little regulation will serve to keep the day's intake constant, and the calorific value need not suffer.

Sudden changes of temperature, such as that experienced on leaving a warm church or theater, often start vicious attacks of coughing. A slower progress and more careful gradation should be tried. Standing in the entry for a few moments and, protecting the face with a handkerchief until several full inspirations of cooler air are drawn, may prevent the attack.

Again, the local conditions of the patient's work must be looked into minutely. A glance over the records of any clinic will show (especially in the men's histories) a surprising number who have worked for a long time in some dusty pursuit. Of course this should cease, and new employment be found at once. But this change is not always (or indeed often) feasible. Yet through the cooperation of the social service departments and the bureaus for organized charity, a great deal of very real help may be obtained. This simple change in surroundings has been sufficient to produce genuine comfort in a good many cases.

There remain to be considered two other types of common cough, "depending sometimes on the amount of expectoration, sometimes on its quality."[2] Here drug therapy would seem to be clearly indicated. But one must even now approach the Pharmacopeia with caution. Austin Flint[3] taught that "expectorants have no place in the treatment of phthisis. An expectorant remedy that includes nauseants must do harm by interfering with alimentation and digestion. Cough palliatives, containing opiates are allowable only when the violence or frequency of cough causes fatigue and prevents sleep."

A number of methods are advocated to allay hypersecretion. Foremost, probably, stands the use of the perforated inhaler, suggested early in England by Sir W. Roberts of Manchester, and Dr. I. Burney Yeo,[4] and long championed in this country by Dr. Beverley Robinson. This simple apparatus is worn easily by patients, and with judicious periods of rest can be kept on most of the time. At night many wear it without annoyance. There is one real objection here, during the colder months. The warm expired air rapidly condenses and finally drenches the face and pillow repeatedly. This is a very genuine drawback to some, disturbing their rest, and it is far better then to discard the apparatus while sleeping. Its beneficial results are often striking. Recently in an adult, who had a rasping cough and profuse expectoration, the constant use of the inhaler over a period of only six weeks, practically eliminated the cough, greatly reduced the amount of sputum, and cleared the chest of all large, moist râles. He had the added benefit of rest at a day camp.

The principal drugs used on the inhaler are creosote or formaldehyd solution in some combination. The former is used at the Vanderbilt Clinic thus:

℞
Creosoti .....
Chloroformi ..
Spts. vini rect. āā p. æ. [i. e., equal parts of each].
M.

The latter is used in this combination:

℞

	gm. or c.c.			
Formaldehydi (40 per cent.).....	1	00		♏ xv
Chloroformi	2	00		ʒss
Mentholi	0	30	or	gr. v
Ol. pini	0	75		♏ x
Spts. vini rect..................ad	15	00		ad ʒiv

M. Sig.—Use drops x on inhaler.

In Quincke's clinic, the attempt has been made to check excessive secretion by induced hyperemia. The foot of the bed is raised from 9 to 12 inches in the early morning, for two or three hours, and again at night. The patient lies flat on the back, the face turned toward the side.

Kuhn's suction mask[5] is still another means to a similar end. It is a device worn over the nose and mouth, like the perforated inhalers, so constructed by a series of valves that inspiration is forced and at a raised pressure (*Einatmungsbehinderung*), while expiration is accomplished naturally. This has been used by Kuhn, even in advanced cases with cavity formation, without accident. He is enthusiastic over the results.

Creosote, administered internally as recommended by Sommerbrodt, must be watched with great care. Its facility for upsetting the stomach is considerable.

Guaiacol (see Sahli's report)[6] has proved milder and safer. But in very few cases is it advisable at all to medicate much by mouth. The inhaler seems to serve every purpose.

Care must be taken not to dry up the secretions to a point where a thick and viscid sputum, almost incapable of being dislodged, makes miserable a patient who formerly enjoyed reasonable comfort. If this complication occurs, which, as pointed out by Hughes Bennett,[7] happens at times during the process of healing and of drying out a large cavity, a mixture containing the syrup of hydriodic acid may be used cautiously for a few days.

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[2] Fox, W.: A Treatise on the *Diseases of the Lungs* and Pleura. Edited by Coupland, 1st edition, 1891.

[3] Flint, A.: Phthisis, p. 400, et seq.

[4] Yeo, I. Burney: Lancet, London, clxxx, 4558, p. 16.

[5] Kuhn, E.: Deutsch. med. Wchnschr., 1906, xxxii, 1486.

[6] Sahli: Lancet, *London*, 1887, ii, 1287.

[7] Bennett, H.: Reynolds' System of Medicine, iii, 585.

The nauseants (squills, senega, antimony, ipecac, etc.) may best be wholly discarded.

Preissnitz[8] recommends hot, wet compresses to the throat and neck.

Of the depressants, codein, heroin, and finally, morphin, given in dry, tabloid form upset the alimentary tract, taken all in all, less than when in some syrup-like combination. To codein is given the preference, as it tends less to constipation.

In the terminal, hopeless stage, free use of morphin seems imperative. The general discomfort and suffering otherwise, is appalling. An excellent combination suggested by Dr. H. S. Patterson is this:

℞

	gm. or c.c.			
Morph. sulph.		005		gr. 1/12
Tinct. belladonnæ		30	or	♏ v
Ammon. chlorid.		30		gr. v
Aquæ dest. ad	4	00		ad ʒi

M. Sig.—Such a dose every four hours, if necessary.

Or this of Dr. S. W. Lambert:

℞

	gm. or c.c.			
Ext. opii				
Ext. Belladonnæ āā		12		gr. ii
Chloroformi	1	3		♏ xx
Syrup. tolutani	30		or	ʒi
Aquæ dest.	120			ad ℥iv

M. *Sig.*—*A teaspoonful every four hours, if necessary.*

For a short time heroin (grs. 1/8 to 1/2) seems to work well; but its efficiency is short-lived, and in the very advanced cases soon must give way to morphin, which at last is the sole means of comfort, scant at best.

16 Central Park West.

MENINGISMUS FROM ACUTE CERVICAL ADENITIS AND PERITONSILLAR INFILTRATION

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Surgeon to the Boston Dispensary
BOSTON

Some unusual features in this case, which so closely simulated some form of meningitis, make it of enough interest to report.

Patient.—A. L., a boy aged 4, was seen June 23, 1910.

Family History.—Father is living and well. Mother has pulmonary tuberculosis, now quiescent. The mother's tuberculosis was first diagnosed while she was nursing this child; she was fairly well advanced in the second stage at this time and undoubtedly had the disease when pregnant.

Personal History.—The patient was an only child and had always been well except for bowel upsets and slight tonsillitis in March. On May 17, a severe attack of coryza came on, and the boy was alternately better and worse for two weeks with more or less constant nasal discharge and slight cough. Then this trouble seemed to clear up and he was all right for a time. The mother had an attack of scarlet fever in May, and the child was exposed on May 6; the mother was promptly isolated. Three weeks after this exposure a slight transient erythema was noticed across the chest, of not more than two or three hours' duration. The boy felt perfectly well at this time. He had eaten fish for the first time in his life the day before this erythema was noticed. After the first week in June the cold which had been much better still persisted. On June 15, the cervical glands were swollen, bilaterally, more on the right than on the left. June 16, 17, 18, the glands were less swollen and the child seemed better at this time. June 19, there was stiffness of the neck on the right side. Temperature 99.6, the tongue coated and the throat clear.

Examination.—June 23, I first saw the boy. Examination showed him to be well developed and nourished. Examination of the heart and lungs revealed nothing abnormal. The throat showed chronically enlarged tonsils; it was perfectly clear, no membrane or exudate was visible. The teeth were good. There was bilateral cervical adenitis. The glands were the size of filberts and slightly larger, discreet, tender, not fluctuant; the skin over them was not reddened. Temperature was 101.2 F. The child felt languid.

Course of the Disease.—Next day, after a restless night, the temperature and pulse were normal. In the morning, the child was sleeping quietly and breathing easily. The glands were somewhat less tender. The condition gradually changed for the worse.

June 25: The child was more listless and weak. Examination showed the pupils equal and reacting to light. No Babinski or Kernig sign was present. Nothing abnormal was found in the examination of the lungs. Examination of the left ear showed the drum slightly reddened. Pulse was 120, temperature 100.2 F. The throat was clear; the tonsils were much enlarged, boggy and pale pink. Gradually the general condition grew much worse. The child's condition was much weaker despite stimulation with salt solution, whisky, caffein and small doses of digitalis.

June 26: The child was apathetic and stupid. The pulse was markedly irregular and somewhat intermittent and would drop suddenly from 120 to 80. The child answered questions only when aroused. Stiffness of the back of the neck was noticed for the first time. At 2 a. m. the condition was alarming. The breathing was stertorous and the child was markedly apathetic, the pulse being weak and irregular. The cervical glands had markedly increased in size. The nose seemed obstructed and the clinical picture resembled that seen in the last stages of nasal obstruction in diphtheria. The child was given antitoxin, though careful and repeated examination of the throat had shown nothing. The result of the cultures taken the day before had not been heard from. Later these cultures showed staphylococcus and streptococcus growth. The child was stimulated with brandy and salt solution and rallied from the acute collapse. The breathing was not quite so obstructed. There was a leukocytosis about 30,000.

In the afternoon, the condition was as follows: General condition about the same as before collapse of early morning, cervical glands markedly swollen, head and neck absolutely rigid, moved with body as a whole, like an iron rod, knees rigid, Kernig sign more marked (a suspicion at a previous examination). Examination of the throat showed a marked bulging shelf over the left tonsil. There was no exudation. Digital examination of the throat was unsatisfactory.

Consultants' Opinions.—The child was seen in consultation by two specialists in children's diseases, one of whom thought, with me, that the condition was tuberculous meningitis. The other thought that there was a possibility of the symptoms being due to the infiltration around the left tonsil and the markedly enlarged cervical glands. These glands had at no time showed fluctuation or softening. It was thought possible that there was pus around the tonsil, but expectant treatment was decided on for a while.

Termination of Case.—That night the child was somewhat better. Next day the shelf over the left tonsil had disappeared; the throat was more easily inspected, the right tonsil was very much enlarged and a condition similar to the shelf-like projection on the left side was present, only not so marked. This quickly subsided. From this time on, the improvement was rapid. The pulse became regular, stiffness of the neck gradually disappeared and the cervical glands became smaller. When the rigidity of the head and neck had almost subsided it was possible to feel enlarged cervical glands as far back as the occiput. Save for a slight irritability of the heart, the boy convalesced quickly, and this irritability soon subsided.

Remarks.—Some weeks after the boy was up and around, there was peeling of the palms of the hands. Desquamation was not noted in any other part of the body. The treatment consisted of digitalis, whiskey, salt solution and caffein. As soon as possible the child was put out of doors for all day, with great benefit.

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[8] Preissnitz: Quoted by Cornil in Nothnagel's Practice: Tuberculosis, p. 609.

Two interesting points in regard to the case are: 1. Had the child recovered from a mild case of scarlet fever and were the glands sequelæ? None of those who saw the case believe this to be a fact. 2. The fact that the mother was tuberculous, and was undoubtedly so when pregnant with this child, influenced me to a great extent in arriving at a diagnosis of tuberculous meningitis. Dr. Hunter Dunn, one of the consultants, pointed out the possibility of the glands and throat being responsible for all the marked meningeal symptoms, which proved to be the case.

261 Beacon Street.

GOOD AND BAD CORSETS

GEORGE B. SOMERS, A.B., M.D.
SAN FRANCISCO

In preparing a paper on "The Use and Abuse of Corsets" read in the Lane Course of Popular Lectures at Cooper Medical College Feb. 10, 1911, I had the following diagrams drawn. They represent the chief points which seem to me characteristic of the good as contrasted with the bad corset.

While the diagrams are in themselves sufficiently explanatory, and afford a formula for judging the good and bad points of any corset, it may not be amiss to add a few words on the subject in general.

Every practicing physician recognizes the evils resulting from improperly worn or improperly shaped corsets and yet few take pains to investigate a patient's habits in this regard. I venture to say that still fewer have any fixed ideas as to what constitutes a good corset.

FUNDAMENTAL PRINCIPLES

In considering the basic principles on which a corset should be built, the method of support is of first importance.

In that region of the body covered by the corset, the pelvic bones and spinal column afford the best opportunities for rigid fixing of the framework.

At the hips, the space between the crest of the ilium and the prominence of the trochanter extended as a zone about the body, lends itself admirably to tight lacing, without danger of injuring internal organs. Lacing here affords a means of holding the corset firmly in place.

Along the back, following the contour of the spine, we may run a more or less rigid piece forming the rear elevation of the structure.

The strength and supporting properties of the corset rest in this back piece and in the hip zone.

To complete the skeleton framework, a front piece less rigid than the back, but straight, should run up as high as the bust. The other main points are sufficiently explained by the diagrams.

LACING

A separate short lace string should be inserted at the hip zone and this part firmly laced first when adjusting the corset. The upper part should be more loosely laced by one or two strings. Whether the corset should be front-laced or back-laced is not of great importance. Each method has its advantages and disadvantages. The choice should be left to the corset-maker, as the situation of the lacing involves problems in the mechanical construction of the corset. The back lacing allows of the simplest construction.

The good corset is shown in Figure 1:

1. It is fixed by lacing about the hips and holds its place entirely independently of garters or straps.
2. It supports the lower abdomen and reduces the hips.
3. It has a straight front.

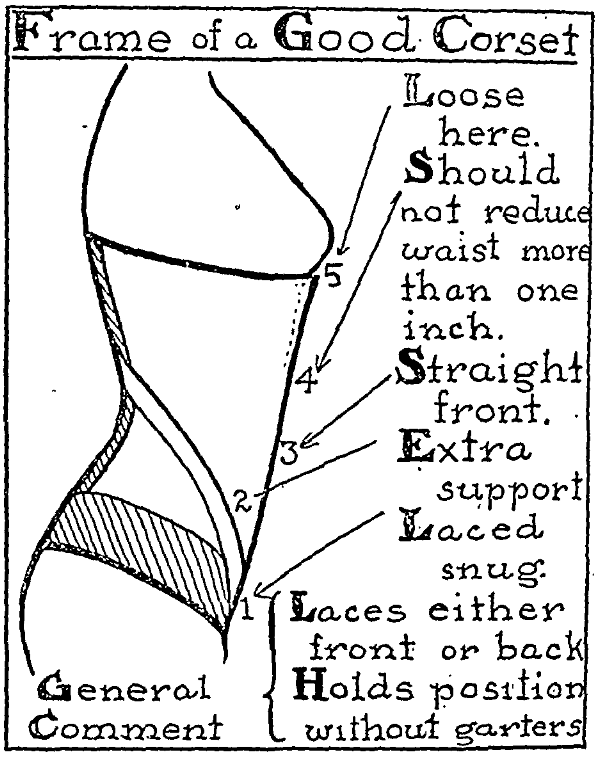
Frame of a Good Corset
Loose here.
Should not reduce waist more than one inch.
Straight front.
Extra support
Laced snug.
5
4
3
2
1
Laces either front or back
Holds position without garters
General Comment

Fig. 1.

4. It is only form-fitting or loose about the waist and bust.
5. It diminishes the waist measure not more than one inch.
6. It laces from below upward by means of two or more lace strings.

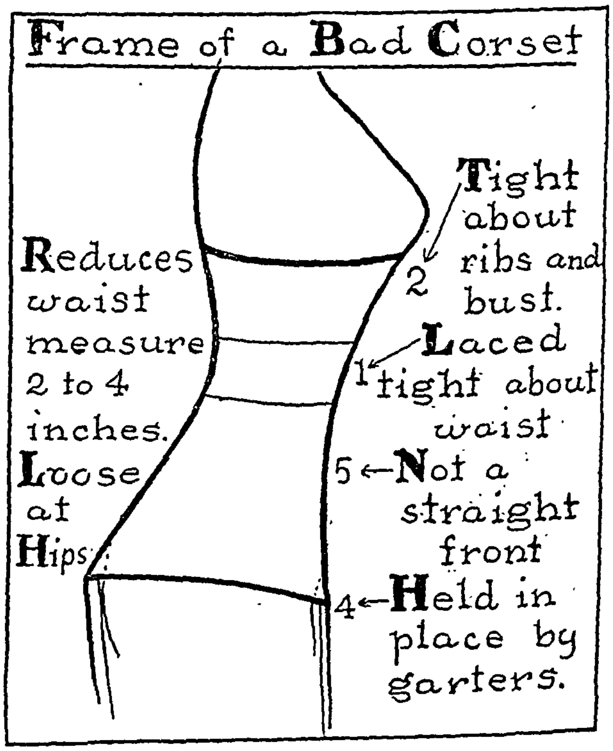
Frame of a Bad Corset
Tight about ribs and bust.
2
1
Laced tight about waist
5 ←Not a straight front
4←Held in place by garters.
Reduces waist measure 2 to 4 inches.
Loose at Hips

Fig. 2.

The bad corset is shown in Figure 2:

1. It shows the zone of greatest compression about the waist.
2. It is loose about the hips.

3. There is no provision for fixing it about the hips.
4. It is held down by garters or fixed by tight lacing in the upper portion.
5. It diminishes the waist measure from two to four inches.
6. It laces by a single lace.

In the selection of a corset the first consideration should be its conformance to the natural form. Secondly, the mechanical device for keeping the corset in place should depend on means which are not injurious. Finally, the corset should be comfortable without being sloppy. If it tends to produce the normal form it cannot do serious harm even if quite snug. Loose corsets are worse than no corsets. The worst corsets made are loose about the hips, giving them no true basis of support.

906 Butler Building.

A NEW CLAMP FOR END-TO-END INTESTINAL ANASTOMOSIS

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DENVER

The uncertainty of perfect approximation of the mesenteric border of the intestine has, no doubt, been the greatest objection to the suture method of end-to-end intestinal anastomosis. Because of the apprehensive post-operative period, the ingenious button device of Murphy has been largely superseded by the suture method of Connell.

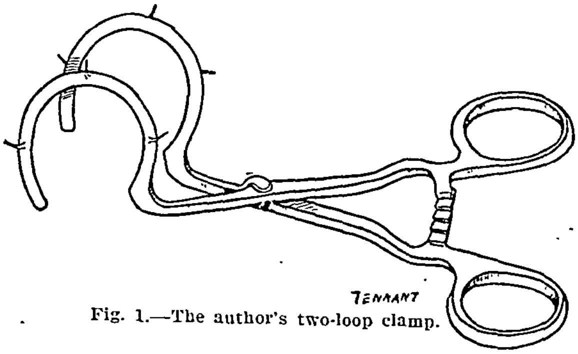

Fig. 1.—The author's two-loop clamp.

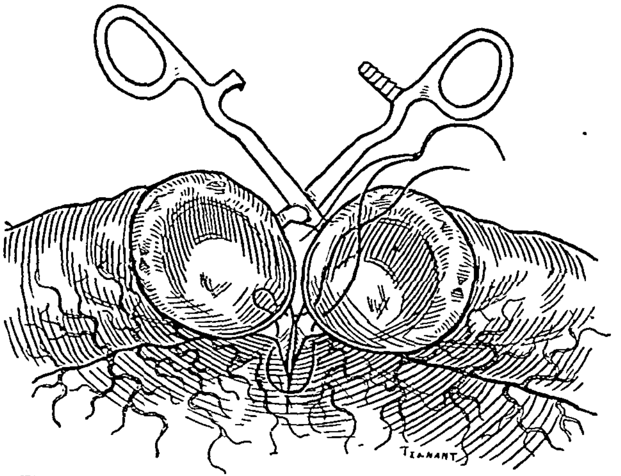

Fig. 2.—Ends of bowel grasped by loops. Mesenteric border very accessible.

The last-named method seems to have proved most satisfactory in side-to-side intestinal anastomosis. The objections to the end-to-end anastomosis are first, as stated above, the difficulty of securing perfect approximation of the mesenteric border, and second, the awkwardness of the method, necessitating as it does, considerable practice on the part of the surgeon before it can be successfully performed.

To work from the inside of such a cylindrical body as the intestine, closed with no free ends, is at first a serious mechanical difficulty. The object of the Connell method, as of all others, is of course to secure an inversion of the free ends of the intestine, thereby approximating the peritoneum. This is satisfactorily secured by the Connell method, but only after considerable practice.

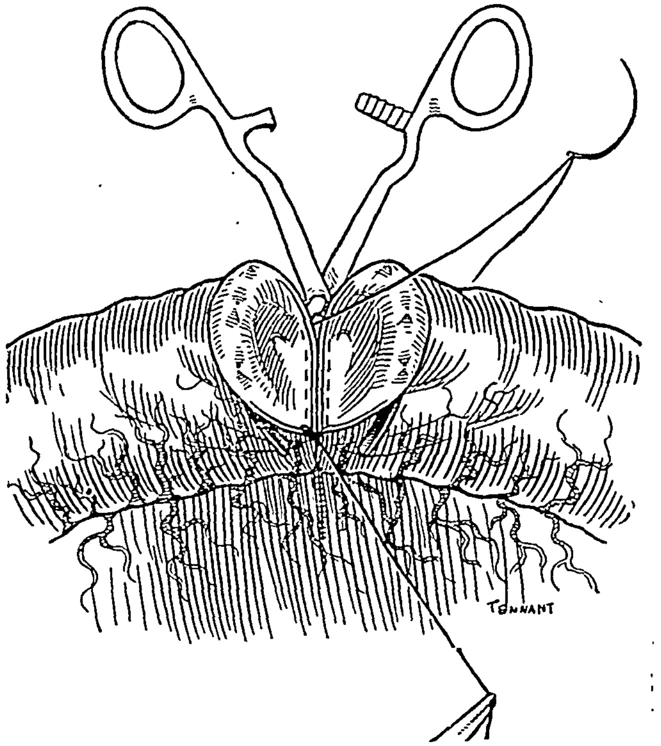

Fig. 3.—Suture half way up on each side of the intestine.

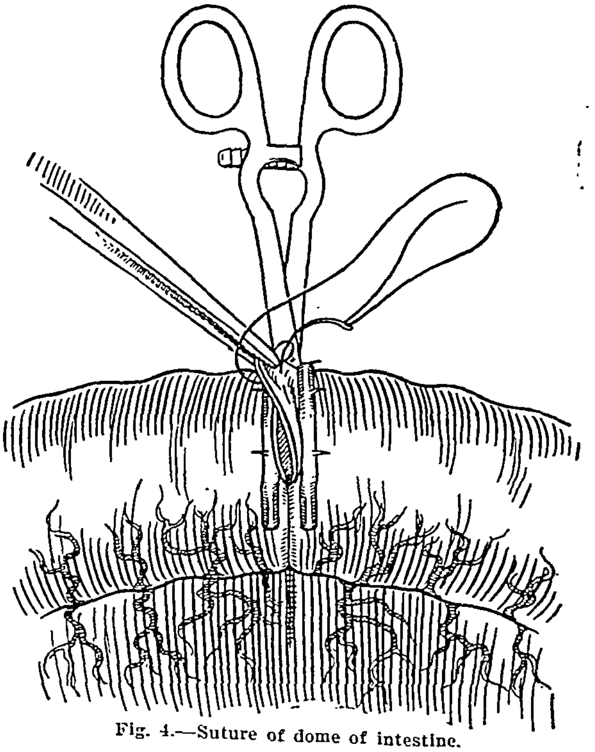

Fig. 4.—Suture of dome of intestine.

To simplify this method and, at the same time, to add to the security of the mesenteric approximation, I have devised the simple two-loop clamp here illustrated. (Fig. 1.) The clamp has a Collins lock, and is easily separated so that each end of the intestine may be engaged in its respective loop (Fig. 2), although the ends may at first be inches apart. The mere locking of the blades brings the ends of the intestine into close apposition with the mesenteric border well drawn up into the operating field. Before the clamp is completely closed, this mesenteric border is securely approximated by suture, and the continuous suture is then carried one-quarter way around each side (Fig. 3), commencing at the mesenteric border and continuing according to the Connell method.

The first tie is made at the mesenteric border with sufficient linen thread left at each end to continue around the intestine. The instrument being placed with its handles away from the operator, the suturing is continued well up on the side nearest the operator first, with the last suture entering the lumen of the intestine. The curved round needle is then transferred to the distal side of the intestine and the same Connell method is pursued as long as necessary.

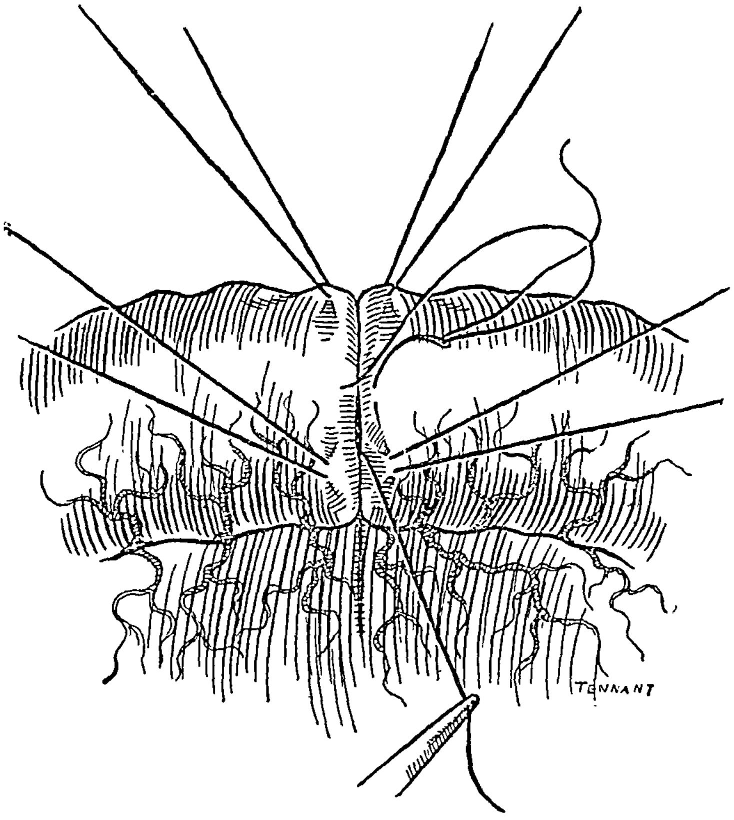

Fig. 5.—Introduction of guy stitches.

As the dome of the intestine is reached, the suture is made to emerge on the outside (Fig. 4). The clamp is then either closed and the ends of the intestine freed from the retaining pins, or the clamp is removed altogether and guy stitches introduced about 1 cm. from the free edge, as illustrated (Fig. 5). These sutures when raised tend to invert the edges of the intestine.

A Cushing parallel deep suture, including all coats of the bowel, is then commenced; this is practically the Connell suture, only right side up, and consequently very much more readily introduced.

As the two ends of the suture meet, the last is made to enter the lumen of the bowel with the final stitch. Both ends are now together, and are accordingly threaded into the eye of the needle as in the Connell plan, and the knot tied inside the bowel. A few Lembert sutures may then be applied about the sites of the guy sutures (Fig. 5), or where the ends of the intestine were impaled on the pins of the clamp.

Criles' technic of end-to-end blood-vessel anastomosis first suggested this idea, and the recent report by Pollock and Spiedel[1] deserves mention in this connection.

612 Empire Building.

A CASE OF MENINGOCOCCUS SEPTICEMIA WITH DEMONSTRATION OF THE MENINGOCOCCUS IN THE BLOOD-SMEAR

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Simon[2] reported a case of meningococcus septicemia in which the meningococcus was demonstrated in the blood-smear. Since then he has found the same conditions in a second case and he has told me that two or three other men have reported similar findings to him. So far as I have been able to ascertain, these are the only cases which have been observed up to the present time, and hence it may not be out of place to report briefly the following instance in which the same findings were observed.

Patient.—A boy aged 12, was in good health until February 24, when he complained of pain over the mastoid region on both sides with some swelling and tenderness.

General Examination.—The patient was first seen on February 27 by Dr. Beck. His pulse was 100; temperature 104 F. There was neither headache nor vomiting, but slight ptosis of the left eyelid and some rigidity of the muscles of the neck and the extremities were present. On lumbar puncture, 25 c.c. of turbid fluid escaped under pressure. Smears made from the centrifugalized spinal fluid showed the menigococcus in small numbers both free and enclosed in polynuclear neutrophilic leukocytes which constituted the cytological picture.

Blood Examination.—A blood specimen gave the total leukocyte count as 7,500, 85 per cent. of which were polynuclear neutrophilic leukocytes, 4 per cent. small mononuclear leukocytes, 11 per cent. large mononuclear leukocytes, while eosinophilic and mast cells were absent. Fully 1 per cent. of the leukocytes contained diplococci, the majority only one pair, but a few contained two pairs; the organisms occurred both in the mononuclear and polynuclear cells. Extracellular organisms were not seen, although they were present in Simon's case. The number of organisms calculated per cubic centimeter in this instance was 7,500. Simon calculated 7,500,000 per cubic centimeter in his case, one neutrophilic cell alone containing over 50 pairs of diplococci.

Many of the neutrophilic cells contained vacuoles which perhaps represent empty digestive vacuoles.

CONCLUSIONS

It is possible that the occurrence of the meningococcus in the leukocytes is much more common than is generally supposed, but owing to the relatively small number of cocci in the blood and the difficulty of finding them, they have no doubt been overlooked. The positive findings in the few cases which have been carefully examined indicate, however, that in doubtful cases careful search in this direction should not be neglected.

Character.—Men build on the rocks, not on the treetops. So do nations. America owes more to the cabin than to the palace; to the man with a calloused palm than to the man with a diamond stickpin.—*United Presbyterian.*

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[1] Surgery, Gynecology and Obstetrics, xi, 612.

[2] Simon, C. E.: The Journal A. M. A., June 8, 1907, p. 1938.

VENOUS ANASTOMOSIS FOR CURE OF VARICOSE VEINS: VENOVENOSTOMY *

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SAN FRANCISCO

In this paper is described briefly the technic of an operation devised by H. A. L. Ryfkogel and myself in these laboratories, and then practiced in the San Francisco Polyclinic and Post-Graduate School.

After working one year in the laboratory on the subject of vascular surgery, with comparatively uniform results, we felt that our technic was worthy of being put into practice in the clinic. Accordingly we performed Delbet's operation on several patients.

As Delbet's operation carries with it a certain amount of danger, by the possibility of thrombus formation in the femoral vein, we concluded to make an end-to-end anastomosis of a branch of the superficial femoral vein with the internal saphenous vein. By so doing, we obviate the danger from a thrombus, for if by error in technic one forms, it will be remote from the femoral vein.

The object of this operation is to reestablish a normal flow of blood in the internal saphenous vein, and in its tributaries. This is accomplished by changing the current of blood from the upper end of the saphenous vein into the superficial femoral vein. Thus the valves of the femoral vein are utilized to support the heavy column of blood which in the normal subject is supported by the valves of the saphenous. The lower part of the saphenous is relieved of all backward pressure from the inflow of blood into it from the superficial external pudic, superficial epigastric, superficial circumflex iliac, and other smaller tributaries. When this vast pressure is released the valves of the saphenous are often competent to sustain the remaining saphenous blood column.

The branch of the femoral vein that we are wont to make use of may be absent. If this should occur one has recourse to three other operations, viz., Delbet's, Trendelenburg's, or Ferguson's.

Delbet's operation, as is well known, consists of a terminal implantation of the proximal end of the distal fragment of the internal saphenous vein into the side of the superficial femoral vein. The operation is not difficult of execution for one skilled in vascular surgery, and is worthy of due consideration. Its chief fault lies in the possibility of a thrombus forming and occluding the lumen of the femoral vein.

Trendelenburg advises ligature of the saphenous in the upper part of the thigh.

Ferguson removes a section of the saphenous near its upper end and, after making a circular skin flap, removes the varicosed veins from the lower part of the thigh and those from the inner aspect of the leg.

The favorable results of venovenostomy depend almost entirely on asepsis and freedom from injury to the veins by mechanical, chemical, and thermal means. There is no danger of leakage in the suture line as the method employed is competent to obviate its occurrence.

The science of surgery is deeply indebted to Alexis Carrel, whose ingenious mind gave it this very efficient and simple technic, which is entirely adequate for any anastomosis of blood-vessels, whether it be arteries or veins, irrespective of size. At the same time, this technic is so uncomplicated and easy of execution that it can be utilized by any surgeon. The only special materials needed are China bead silk, No. 16 cambric needles, and weak clamps (tapes may be used in place of the clamps).

PREPARATION OF SUTURES

The manner in which the suture material is prepared is of vital import. We have tried many methods with much dissatisfaction, but now employ the one here described with entire safety and little inconvenience.

The needles are threaded with China bead silk as it comes from the market, or it may be split. Then the threaded sutures are sewed into a piece of gauze bandage. They are rolled so as to avoid bending the fine needles, and put into a wide-mouthed ounce bottle. The bottle is filled with warm petrolatum, and put into the autoclave for sterilization. When removed from the autoclave, the bottle is sealed with wax and so kept until needed. At the time of operation, the bottle is washed with pure liquor cresolis compositus. After the bottle has been washed free from all the antiseptic it is opened by sterile hands which are covered by gloves.

PREPARATION OF PATIENT

The evening prior to the operation the patient is given 2 ounces of castor oil, the leg is washed with soap and water from hip to knee, and covered with sterile gauze. One half hour before operation the patient is given $^1/_6$ grain of morphin sulphate and $^1/_{100}$ grain of atropin sulphate hypodermatically.

When the patient is on the operating table three coats of iodin are applied to the field of operation. Along the proposed line of the incision the iodin is removed with alcohol immediately preceding the beginning of the operation. Nitrous oxid and oxygen, or ether, is administered in the smallest amount that is sufficient to keep the patient quiet.

OPERATION

An incision 3 inches in length is made along the inner edge of the sartorius muscle and over the lower part of Scarpa's triangle. The linen is sewed to the skin at the edge of the wound with closely applied interrupted sutures, so as to avoid as nearly as possible any contamination from the skin, either chemical or bacterial. The wound is retracted inwardly and the internal saphenous vein immediately found lying buried in fat external to the fascia lata. It is freed from fat and adventitia. The vein is then ligated in the upper angle of the wound. Two inches distal to the ligature it is clamped with a Langenbeck serrefine, which clamp must have a soft spring, and the vein is severed with a sharp knife. We never employ scissors for cutting the vessels, on account of the crushing effect. The distal part is washed clear of all blood remaining in its lumen with Locke's solution, or normal salt solution. The vein is then heavily coated with petrolatum, and it is ready for anastomosing. The next step is to seek the branch of the femoral that is to be anastomosed to the saphenous.

By opening the fascia lata over Scarpa's triangle the internal cutaneous and long saphenous nerves are seen crossing the vessels from without inward. The crural branch of the genitocrural nerve lies in the sheath of the vessels, slightly external and anterior to the artery. The artery lies anterior to the vein, leaving only a slight margin of the latter to be seen on inspection. The vein is separated from the artery and a large branch is sought. When found it is ligated about 2 inches from the femoral vein. Then a Langenbeck serrefine is placed on the branch near the femoral vein. The branch is then cut about 2 inches from the femoral and treated as was the saphenous.

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* From the Laboratories of Experimental Research, State University of California.

The distal end of the saphenous is then joined to the proximal end of the branch of the femoral in the following manner:

Three guy sutures are placed so as to unite the two veins, and so as to divide their circumference into three equal parts. When made taut, the circumference of the veins forms a triangle which has a guy suture at each angle. For descriptive purposes these guy sutures will be labelled I, J, and K. If traction is made on I and J by an assistant, the surface I J of the triangle will be brought anterior and made accessible for the introduction of the continuous suture which is to be used to unite the vessels permanently. If traction is at the same time made on K by a weight (we employ an artery clamp for this purpose) the sides of the vessels are drawn away from the surface that is being sutured, and thereby are prevented from becoming injured by the passing needle. These guy sutures have another function, viz., they elevate a slight collar at the margin of the vessels which is equal in depth to the distance they are placed from the free edge of the veins. This facilitates the introduction of the stitches of the permanent suture which is to be placed.

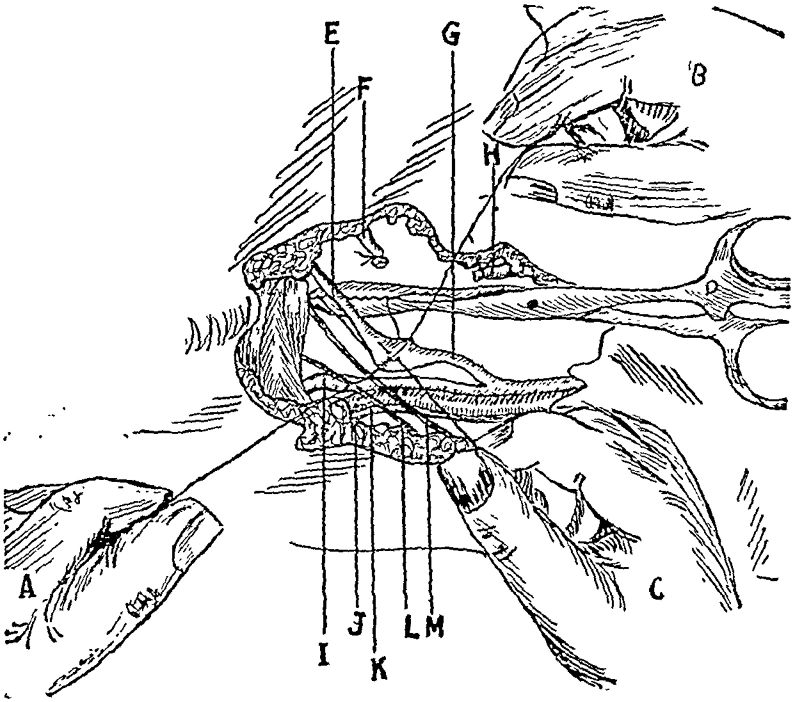

Diagram to illustrate the procedure of venous anastomosis for varicose veins: A and B, hands of assistant making traction on anterior guy sutures; C, hand of surgeon passing continuous suture; D, weight on posterior guy suture; E, distal end of saphenous vein; F, distal end of branch of femoral vein; G, proximal end of branch of femoral; H, proximal end of saphenous; I, femoral vein; J, femoral artery; K, crural branch of genitocrural nerve; L, internal cutaneous nerve; M, long saphenous nerve.

We now begin a continuous suture at guy suture I, including in the grasp of the stitch only the fine collar raised by the traction on the guy sutures, and placing the stitches as closely together as possible. This suture is responsible for the prevention of all leakage, therefore, it must be accurately applied. It passes through the entire walls of the vessels, and brings intima into contact with intima. It is important to avoid any adventitia being drawn into the lumen of the vessels, as blood is prone to clot when in contact with foreign tissues. This continuous suture is carried completely around the vessels and tied to its free end when the latter is reached. The assistant changes the weight and his hands to the proper guy sutures when the continuous suture reaches the consecutive angles of the triangle.

The anastomosis is thus completed and when the serrefines are removed the veins fill at once with blood. There is no bleeding if the suturing has been executed properly, but if there be a bleeding point an interrupted suture will suffice to stop it. The deep tissues are closely and carefully adjusted around the area of the anastomosis to avoid as much as possible any dead space, and sutured with No. 0 iodized catgut sutures. The sartorius is allowed to fall back into place, and the integument is closed with the fine artery needles.[1]

The patient is put into bed, and his leg kept elevated for two days; after this length of time he is permitted his freedom.

1820 Sutter Street.

RESUSCITATION BY CARDIAC MASSAGE

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Cardiac massage was first suggested by Schliff in 1874, but not until 1898 was it applied to man. Since then, and with each succeeding year, an increasing number of cases have been recorded with a fair measure of success.

This extraordinary power of the heart to resume its function after death under certain physical conditions is well known to the laboratory worker. I think that it was Kuliabko who first demonstrated that the isolated heart could be made to contract by injecting Locke's solution into it under pressure, and that too after the heart had remained in a frozen salt solution for a period of twenty-four hours. The essential factors for the resumption of the cardiac mechanism are the presence of a certain amount of fluid in the ventricles and the necessary pressure in the coronary arteries. In the laboratory, these factors may be provided by injecting into the carotid artery toward the heart normal saline solution charged with epinephrin. Spina of Prague obtained similar results by injecting 200 c.c. of saline solution into the veins of a dog; this forced the blood along before it and when the semilunar valves were reached the stream closed them and the blood was driven into the coronary arteries.

While these methods have proved successful in the lower animal they have not, so far as I know, been applied with equal success to the human subject. When, for one reason or another, the action of the heart has been arrested there remains but one practical method of resuscitation, namely cardiac massage. Although the majority of instances in which this procedure has been resorted to have been those of chloroform syncope, it has been recommended when the syncope is the result of drowning or asphyxia, and when due to the suspension of function from simple exhaustion or injury.

The following case recently came under my observation:

Patient.—R. T., male, aged 55, reg. No. 2840 (P. E. H.) was admitted to the hospital Oct. 3, 1910. The diagnosis was hydrocele. There was nothing of significance in his family or personal history. He was a moderate user of alcohol. There was no lesion of the lungs and the heart sounds were clear, rhythmical and of good quality.

Operation.—The patient was prepared for operation for the radical cure of hydrocele. The anesthetic at the beginning was ether; difficulty was experienced in its administration, however, and as the patient had taken an unusual amount without the desired result, chloroform was substituted apparently with satisfactory results.

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[1] Wound Closure with Minimum Scar, The Journal A. M. A., April 24, 1909, p. 1333.

Collapse and Treatment.—The operation had just begun, the incision was made, when it was observed that the patient had become intensely cyanosed. In a moment he was pulseless and soon afterward respiration ceased. The head of the table was rapidly lowered and artificial respiration at once resorted to. Realizing the otherwise hopeless situation, the abdomen was rapidly opened and with one hand on the chest wall and the other against the diaphragm I massaged the heart at the rate of from 15 to 20 movements to the minute. The actual time was not recorded in the excitement of the moment, but in approximately 2 minutes feeble but irregular fibrillary contractions were felt. Gradually the impulses became more forcible and more regular, and after an interval of 8 minutes, during which time massage was continued, resuscitation seemed assured. At this time the pulse-rate registered 130.

Result.—The abdominal wound was closed, the operation on the hydrocele completed and the patient returned to the ward. The subsequent history was uneventful.

In a series of forty-six cases, reports of which are collected by Cockovic,[1] in seventeen the results were classified as positive and in twenty-nine as negative. Of the former, in only nine was the effect permanent; in the other patients survived for from five to twenty-seven hours. Thus there was only 20 per cent. of successes.

Perhaps the most important practical consideration is the method of procedure. Shall the heart be massaged directly through a thoracoplastic opening, by the transdiaphragmatic or by the subdiaphragmatic route? Dismissing any theoretical considerations, we find the best results are obtained by the subdiaphragmatic route. In sixteen instances of the latter there were ten positive results, in twenty-four of the thoracic route only seven; and in the six cases by transdiaphragmatic route there were no resuscitations.

The following table[2] shows the relative value of the various methods:

	Successful.	Partially Successful.	Failures.	Total.
Direct	2	8	18	28
Transdiaphragmatic	0	1	2	3
Subdiaphragmatic	8	5	6	19
Total	10	14	26	50

Because of its greater simplicity and higher percentage of recoveries the subdiaphragmatic route should be adopted as the conventional procedure, except perhaps in children in whom the elasticity of the chest wall enables one to make adequate pressure on the heart without opening either chest or abdomen. How long one is justified in waiting before resorting to massage may be judged from the fact that there have been no recoveries when the syncope has been of more than ten minutes' duration; and the largest measure of success was obtained when the interval did not exceed five minutes. The sooner the massage is begun, therefore, the brighter the prospects. As the proper oxygenation of the blood is indispensable to resuscitation, artificial respiration should at the same time be practiced, or direct insufflation by the Auer-Meltzer method.

In a case reported by Rehn,[3] failing to resuscitate the patient by subdiaphragmatic massage and Sylvester's method of artificial respiration, he opened the diaphragm, practiced direct massage, and at the same time established positive pressure with the Brauer apparatus. The result was almost instantaneous on both heart and respiration. In two hours the respirations failed again and further attempts at resuscitation were ineffectual. The secondary collapse was attributed by Rehn to a pneumothorax, which developed when the pleura was torn in opening the diaphragm.

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1. Cockovic: Arch. f. klin. Chir., lxxxviii, No. 4, p. 917.
2. Progressive Medicine, March, 1911.
3. Rehn: München. med. Wchnschr., Nov. 30, 1909.

NOMA (CANCRUM ORIS) IN AN ADULT, WITH REPORT OF A CASE

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Noma in the aged is of such unusual infrequency, compared with its occurrence in children, that I am induced to record a case which came under my observation in the summer of 1910. Considering the rarity of the condition as well as the scarcity of the literature dealing with the disease, especially as relates to its presence in the aged, I believe that I am justified in offering a brief account of the nature of noma.

Noma is a rapidly progressive and probably specific infectious process of a gangrenous type, causing extensive tissue destruction and usually having its origin on the mucous membrane of the vulva, gum or cheeks, and sometimes, though seldom, the ear or anus. Noma affecting the region of the cheeks or gums is known as cancrum oris; involvement of the vulva is termed noma pudendi.

Children between the ages of 3 and 8 years are most frequently attacked; the disease occurs more frequently in girls than in boys. This sexual predisposition continues throughout life and is not due to any peculiar susceptibility, but to the fact that the female genitalia offer a more suitable field for infection. Text-books on pediatrics are almost unanimous in declaring the condition to be one essentially of childhood and that the disease is not seen in nurslings or adults. That this impression is somewhat erroneous will be seen from the case reports below.

Between the years 1848 and 1903, an interval of fifty-five years, several cases in the aged have been recorded in medical literature. Tourdes[1] 1848, reported nine authors who had seen noma in persons between 15 and 72 years of age; von Bruns[2] 1859, from 413 cases collected by him, found only eleven in persons whose ages ranged between 15 and 70; Strueh[3] 1872, reports a case of his own in a patient aged 30, and calls attention to a case observed by Vogel in a youth of 18; Hildebrand[4] 1873, collected a series of cases numbering twenty-two in persons over 15 years of age; Brydon[5] 1882, one case; Herman[6] 1883, one case; Murillo[7] 1886, one case; Herff[8] 1890, one case; Masterman[9] 1891, two cases; Koster[10] 1892, one case; Stephenson[11] 1892, seven cases; Ziegler[12] 1892, one case; Le Count[13] 1898, one case; Mangubi[14] 1898, one case; Zusch[15] 1901, one case; and Reale[16] 1903, one case.

Poorly nourished, cachectic subjects and those living under vitiated environments are said to be the types most frequently affected. That filth, squalor and tenement life are not alone responsible for the disease

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1. Tourdes: Thèse de Strassburg, 1848.
2. Von Bruns, V.: Handbuch der practischen Chirurgie, i, Part 2.
3. Strueh: Inaugural Dissertation, Gottingen, 1872.
4. Hildebrand: Quoted by Ziegler, *vide* reference 12.
5. Brydon: Brit. Med. Jour., 1882, p. 838.
6. Herman: Trans. Obst. Soc., Lond., 1883, xxv, 141.
7. Murillo: Noma (*a proposita de un caso en un adulto.*) Rev. med. de Chile, Sant de Chile, 1886-87, p. 312.
8. Herff: Deutsche med. Wchnschr., 1890, xvi, 949.
9. Masterman: Two Cases of Spreading Gangrene Around the Mouth Occurring in Adults, St. Bartholomew's Hosp. Rep., London, 1891, xxvii, 2055.
10. Koster: Ett fall af noma hos 44-arigivinna, Förh., Gotesborg Läk. Sällsk., 1892, p. 74.
11. Stephenson. Cancrum Oris in Adult Life, Brit. Guiana Med. Ann., Demerara, 1892, p. 127.
12. Ziegler: München. med. Wchnschr., 1892, xxxix, 107.
13. Le Count: Tr. Chicago Path. Soc., 1898, iii, 180.
14. Mangubi: Sluchai nomi u. vzroslavo. Vrach. zapiski, Mosk., 1898, v, 18.
15. Zusch: Ein Fall von Noma mit ausgedehnter Soorbildung in hohen Alter, München. med. Wchnschr., 1901, xvii, 785.
16. Reale: Un caso di noma in adulto. Policlinico, Rome, 1903, ix, 1431.

has been conclusively demonstrated in more than one instance, especially in the epidemic of noma which occurred in an orphanage at Albany, N. Y., where good practical sanitary, hygienic and dietetic conditions prevailed. It also occurs very frequently as a complication of the exanthemata, notably measles.

In the above-mentioned cases of noma the underlying conditions have been most varied. Thus, we see the disease, according to the case reports, following erysipelas, typhoid fever, amebic dysentery, pleuritis and nephritis. Stephenson[11] regards renal disease as an important factor in the causation of cancrum oris in the aged.

The exact status of the disease as to etiology has not been definitely established and is further rendered confusing by the multiplicity of the terms used in the description of the malady. Noma, at all events, is a rare condition, but its assumed rarity was very probably due to the difficulty experienced in recognizing an exact causative organism. At the present time, even, it is by no means certain that the organisms described by investigators of the past have anything to do with the disease. The frequent use of the term "noma" synonymously with "gangrenous stomatitis" is to be regretted, as the latter term is purely a generic one and of no precise significance, nor does it furnish us with any adequate idea of the existing pathologic condition. The following terms have been used and are to-day employed to describe noma: gangrenous stomatitis, gangrena oris, gangrenopsis, stomato-necrosis, necrosis infantilis, buccal anthrax, water canker, cancer aquaticus, and sloughing phagedena. *Wasserkrebs,* a term originally coined by A. Richter in 1828, in his initial treatise on noma, is the name given the disease by the Germans. The French use the phrase *gangrène de la bouche.* The foregoing terms are a source of confusion and of no importance save from a symptomatic standpoint.

Reverting to the etiology of the disease, it was once believed to be the manifestation of some neural disturbance, owing to the almost invariable occurrence of the disease in a certain part of the cheek. Whether the disease is some form of mycotic necrosis, as first claimed by Froriep[17] or of bacterial origin, is still an open question. Lingard[18] found in the tissues long, thread-like growths, the individual threads being composed of small bacilli. He reported also finding a bacillus similar to the above in a calf suffering from what was apparently cancrum oris. Ranke[19] found in noma tissues certain cocci, the specific nature of which have never been recognized. As a result of his findings, Ranke concluded that different forms of gangrene resulting from noma unquestionably occur in children who have a tendency to disease of this character; i. e., without infection from contact.

The endemicity of the malady in public institutions coupled with the seeming choice of the disease for localization on the mucous membrane of the different openings of the body suggest that the causation may be looked for in the invasion from without of microorganisms. Schimmelbusch,[20] as a result of his bacteriologic study of one case, found bacilli often in shortened pairs and sometimes in long filaments.

An extremely good digest of the subject of noma is given by Blumer and McFarlane,[21] who have reported a series of sixteen cases occurring in epidemic form which they accepted as undoubted noma. As a result of their investigations, they concluded that the disease began as a simple infection and terminated in a mixed infection, and that the mixed infection was not always due to the same organism, but was usually due to a long organism of a leptothrix type. In a most elaborate and highly interesting treatise on noma by Weaver and Tunnicliffe[22] is incorporated the results of the bacteriologic researches concerning noma as undertaken by Grawitz, Bartels, Guizetti, Babes, Zambilovici, Foote, Nikolaysen, Schmidt, Petruschky, Freymuth, Saft, Krahn, Seiffert, Perthes, Braun, Matzenauer, Elder, Ranke, Rosenberger, Brunning, Rona, Buday, Pollard, Herrman, Passini and Leiner, Walsh, Sailer, Strueh, Schimmelbusch, Longo, Hofmann, and Kuster. In the majority of the cases of the above observers the superficial parts of the slough showed mixed cultures; in the deeper parts, the sections often showed almost a pure growth. The organisms most frequently found were slim, thread-like bacteria, decolorizing rather easily by Gram and not growing on ordinary media.

REPORT OF CASE

History.—June 4, 1910, I first saw Mrs. E. M. F., a housewife, aged 59, whose family history was of no material value. The patient was the mother of eight children; had one miscarriage; menstruated at 14; climacteric reached at the age of 43 without any untoward results. For the last eighteen or twenty years previously the patient had had very poor health, being almost constantly ill with gastric and intestinal disturbances. As the patient tersely stated it: "All my life I have been a sufferer from loose bowels and heartburn." Within the past five years the patient has been afflicted with articular rheumatism. Queries as to previous treatment revealed the fact that during the previous five months the patient, at seven different intervals, had taken large amounts of calomel in broken doses. She declared that her former physician advised her when feeling unwell to take a dose of calomel. A daughter of the patient aptly termed her mother a "calomel fiend."

Examination.—Patient looked at least ten years older than she really was. She was wrinkled and emaciated, and bore all the earmarks of a woman who had had a strenuous struggle with life. Evidences of insufficient nourishment and hard work were most striking; personal hygiene very bad; living environments wretched. On going over the patient very thoroughly I found that I had to deal with a chronic interstitial nephritic condition, complicated with endocarditis.

Treatment and Course of Disease.—As it was apparent that the patient's span of life was drawing to a close, only simple palliative measures were resorted to. Under this mode of treatment the patient maintained her balance for a fortnight, when early on the morning of the fifteenth day of her illness my attention was directed to a slight swelling on the left side of the face. Examination of the mouth revealed an ulcerated patch on the mucous membrane of the gum covering the outer aspect of the mandible. The teeth were carious and disgustingly dirty; the lower teeth were artificial; there was a limited amount of exudation. The odor was most fetid. I prescribed an oral antiseptic and promised to call again the same evening.

On my second visit the swelling had increased and had extended more to the middle line. There had been a slight hemorrhage at this time and the exudation had increased. Within the short space of seven hours the ulcerative process had become a dark and dusky red, which was soon followed by a circumscribed area of dead exudate. There was also a slight sloughing which the patient was trying, in vain, to expectorate. It was at this juncture that Dr. Stephen W. Stafford kindly consented to see the patient with me. As a result of his examination, he concurred in my diagnosis and immediately pronounced the condition cancrum oris. The disease was now spreading rapidly and there was a well-marked line of sloughing tissues following the imprint of a set of false (lower) teeth. The frenum of the lower lip soon became involved and it seemed that that portion of the mouth between the outer mucous membrane of the alveolar process and the inner side of the cheek was literally rotting away. The odor at this time had become so bad that it appeared to invade the whole household. It was most disgusting and the deodorants employed proved of little value.

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[17] Froriep: Chirurgische. Kupfertafeln, 1844, p. 458.

[18] Lingard: Lancet, London, 1888, ii.

[19] Ranke: Zur Aetiologie und pathologischen Anatomie des nomatosen Brandes, Jahrb. f. Kinderh., Leipsic, 1888, xxvii, 309.

[20] Schimmelbusch: Deutsche med. Wchnschr., 1889, xv, 516.

[21] Blumer and McFarlane: Am. Jour. Med. Sc., xxii, 527.

[22] Weaver and Tunnicliffe: Jour. Infect. Dis., 1907, iv, 8.

On the morning of the third day the frenum of the lower lip began to split from within outward and the whole of the inner aspect of the mucous membrane of the left cheek was one black, greenish and garnet mass, attended with a slight hemorrhage. The tongue was swollen beyond its natural size and deglutition was very difficult. Speech was painful and required great effort.

Later the same day the tissue destruction had progressed to such an extent that the inner angle of the cheek began to break down. The patient's condition at this time was most serious and death was but a question of a few hours. There was profound prostration, feeble pulse and retention of urine. The patient's condition rapidly grew worse, she soon went into a typhoid state and died that night at 11 o'clock. Only twice during her illnes did the temperature go beyond 100 F.

June 21, tissue scrapings and oral secretions were submitted for bacteriologic study to Dr. William H. Seeman, who made the following report:

Slide 1.—Leishman (Romanowsky) staining. *Spirochæta dentium* present in considerable numbers. Great quantities of pus cocci. Organism of a leptothrix type plainly discernible. Fusiform bacilli present, but not to any marked extent.

Slide 2.—Weak carbol-fuchsin staining. Innumerable spirochetes easily demonstrable. Bacilli also present which seem to be the early stage of some form of spirillum. In no way does the latter resemble Vincent's spirilla.

Anaerobic culture yielded practically negative results. Pus cocci and non-pathogenic bacilli found. The culture failed to show any thread-like organisms.

It was fortunate that during the above examination Dr. Seeman had at the same time submitted to him secretions from a case of Vincent's angina and he made comparative examinations between the specimens of the two cases. As a result of this comparative bacteriologic study, Dr. Seeman was able to determine very distinctly the morphologic and cultural differences between the causal organism of Vincent's angina and the organism which probably causes noma. The essential difficulty of recognizing a certain and definite causative organism is usually obscured by the great number of bacilli of uncertain character which are always found in nomatous tissue. Moreover, it must be noted that in the mouth of the normally healthy person bacteria are always present in large numbers and the following have been found: *Spirochœta dentium, Spirillum sputigenum, Bacillus buccalis maximus, Iodococcus vaginatus,*[23] *Leptothrix buccalis innominata* and the *Leptothrix buccalis maxima.* In all likelihood, they are non-pathogenic. The existence of dental caries always proves a most favorable nidus for microorganisms. Aside from this, it is interesting to note that the following pathogenic microorganisms may also be present in the mouth under apparently normal conditions: the *Diplococcus pneumoniæ, Diplococcus lanceolatus, Micrococcus septicæmia sputi, Streptococcus pyogenes, Micrococcus tetragenus, Bacillus crassus sputigenes,* and the *Bacillus coli communis.*

From a consideration of the case just recorded it is possible to obtain a clinical picture of the disease. The diagnosis does not present difficulties when the disease is well established. However, noma, when affecting the genitalia, might be mistaken for ulcerating granuloma of the pudenda. The symptoms are similar in some respects to those encountered in infectious submaxillary angina (Ludwig's). In fact, in many cases it is impossible on clinical grounds alone to distinguish angina from noma. Ludwig's angina differs from noma in that it displays more of a tendency to destroy loose tissues and avoid the denser ones. It often happens that Ludwig's angina terminates in gangrene.

The symptoms produced by noma in the aged do not differ materially from those seen in childhood. It can be readily seen that the predisposing factor in the foregoing case was a frail human economy whose vital powers were lowered by chronic renal and cardiac disease, to which were added insufficient nourishment and vitiated environments. It may be asked if the heavy calomel medication just prior to the last illness may not have played its part in aiding the condition. While it is possible that there may have been a condition bordering on mercurialism, it must be borne in mind, says Reisman,[24] that mercury as a causative factor in this condition has been absolutely disproved, quoting Coates[25] in support of this view. Dr. Benjamin Rush[26] cites an instance in which a colleague of his, Dr. Stewart, was in the habit of giving 20 grains of calomel three or four times a day and continuing this as routine treatment for five or six days without any ill effects. It is to this same Dr. Stewart that modern syphilographers owe the idea of mercury medication by inunction, as he was the first to compel patients to wear socks containing mercurial ointment in the treatment of luetic conditions. Dr. Stafford, who saw the case in consultation, also rejects the idea of calomel medication having anything to do with the production of the disease.

The condition of the patient at all times precluded the possibility of ever doing anything except to institute palliative measures. The drastic treatment so necessary for a cure in these cases was entirely out of the question.

CONCLUSIONS

1. Noma does exist in the aged, but its occurrence is remarkably rare.

2. Noma in the aged does not differ materially from the disease as seen in childhood. The supposed predilection of this malady for the female sex is due alone to the fact that the female genitalia offer a more suitable field for infection.

3. No certain and definite organism has been definitely established as the causative factor; the indictment of the long, thread-like bacillus, so frequently regarded as the cause of the disease, is on purely conjectural grounds. While in the realms of the hypothetic metabolic retrogression brought about through previous illness, vitiated environment and bad hygienic conditions may effect a change in the pathogenicity of the previously harmless microorganisms of the mouth to such an extent as to cause an overwhelming of the tissues of the cheeks and jaws, and thus produce gangrene and a condition of general sepsis.

4. Infectious submaxillary angina may be the forerunner of noma, and once the gangrene arises it would be difficult, indeed, to say whether the condition was due to Ludwig's angina or noma. This, too, despite bacteriologic observations, as it is more than probable that the two conditions could be coexistent. It is highly probable that noma is a process caused by more than one type of organism.

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[23] *Iodococcus vaginatus* (Miller) is found in unclean mouths; gives a peculiar reaction with iodin, the sheath being stained yellow, the cocci dark blue.

[24] Reisman: Osler's Modern Medicine, ed. 5, 48.

[25] Coates North American Med. and Surg. Jour., ii, 1826.

[26] Rush, Benjamin: Medical Inquiries and Observations, 1815, iii, 23-4, Philadelphia.

THE CHEMISTRY OF NEPHRITIS *

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The purpose of this paper is to present, as concisely as is consistent with clearness, the chief points in the chemical changes which occur in an organism suffering with nephritis. The aim is to confine the remarks to those non-suppurative forms of nephritis, which are termed Bright's disease, rather than the various suppurative or other focal lesions due to localization of bacteria. If, throughout the paper, many of the statements seem dogmatic, the necessity for brevity must be held accountable. Lengthy argument would only seem to render less clear a subject which, at best, is but in its developmental stages. The point of view presented is taken to represent that which is most modern and most widely accepted.

It is proposed to take up the subject in this sequence:

I. Review of normal metabolism of proteins, fats, carbohydrates and salts, in reference to excretion of intermediate and end-products by the kidneys.

II. Metabolism, excretion and retention in (a) acute nephritis, (b), chronic nephritis of interstitial and parenchymatous varieties.

III. Metabolism, excretion and retention in nephritis with uremia, with a consideration of the theory of internal secretion.

IV. Metabolism, excretion and retention in nephritis with edema.

V. The relation of chemistry to vascular hypertension and cardiac hypertrophy.

I. NORMAL METABOLISM OF PROTEINS, FATS, CARBOHYDRATES AND SALTS

The foods ingested are in the form of proteins, fats, carbohydrates, inorganic salts and water. The end-products of fats and carbohydrates are carbon dioxid and water, the former excreted chiefly through the lungs, the latter through lungs, skin, intestine and kidney. If for some reason the metabolism of the carbohydrates is incomplete, the intermediate products can be excreted by the kidney for a long time with little disturbance in this organ, as may be seen in diabetes. Late in the course of this disease one often sees a large, pallid kidney which, however, may possibly be caused by other factors than the mere excretion of glucose, beta-oxybutyric and diacetic acids. In the case of fats the intermediate products, and even the emulsified fat itself, as in cases of lipemia and lipuria, may be excreted without apparent influence on the kidney. Inorganic salts and water apparently pass through the organ with no difficulty in health. The end-products of protein metabolism, urea, carbon dioxid plus water, also are eliminated with no difficulty, but in those diseases in which the necessity for the elimination of intermediate products appears, the universal incidence of some form of chronic nephritis would seem to indicate that these bodies, the purins, ammonia, carbamic acid and uric acid, have a distinct irritative effect on the kidney.

It is believed to-day that urine depends for its water and inorganic salts on the activity of the glomerules, and for its organic constituents on the activity of the epithelial cells of the tubules; but the nature of the changes in the materials passing through the epithelium has been incompletely studied and is vaguely understood. It is known, however, that the epithelium has synthetic power, as is seen in the building up of hippuric acid from benzoic acid, the latter a metabolite of intestinal putrefaction. Anabolic activity is evidenced in the formation of creatinin from creatin. Aside from this meager information the chemical changes in the kidney itself form a chapter for investigation that can only be opened with newer and more exact methods of experimentation and observation.

II. METABOLISM, EXCRETION AND RETENTION IN ACUTE NEPHRITIS AND CHRONIC INTERSTITIAL AND CHRONIC PARENCHYMATOUS NEPHRITIS

In nephritis the elimination of the end products of metabolism has been studied extensively with the idea of learning to what degree the disease may cause retention of final or intermediate products and what influence the disease may have on metabolism in general, either directly or through the retention of injurious metabolites.

For the purposes of this paper it is sufficient to classify nephritis as acute, chronic interstitial and chronic parenchymatous.

In the course of acute nephritis the retention of the products of protein metabolism, as shown by the determination of the total quantity of nitrogen eliminated, in relation to the total nitrogen ingested, usually is very considerable. This is especially evident in the earlier stages of the disease when the total excretion of urine is almost *nil.* Later in the disease, however, as the amount of urine increases, the output of nitrogen increases and may be relatively excessive for several days, apparently in the attempt to get rid of that stored up in the organism during the preceding period of depressed excretion.

A very important feature, that of sodium chlorid excretion, which will be discussed more fully in connection with edema, may be dismissed at this point with the statement that in a general way in acute nephritis it parallels that of nitrogen. Exceptional cases have been described in which the ability to excrete sodium chlorid was very much less than the ability to excrete nitrogen, and, indeed, any other urinary constituent, even including water. Experimentally it has been found that in those forms of nephritis in which the tubules especially are affected, the nitrogen output is diminished, whereas this is not the case where the glomeruli are affected almost to the exclusion of tubular disease.

In the chronic nephritis of both interstitial and parenchymatous forms the nitrogen elimination is variable. For periods of days and even weeks there may be well-marked retention of nitrogen amounting to as much as 4 gm. a day, but this cannot persist for a great length of time and usually is followed by a period in which the elimination of the retained nitrogen becomes evident in an amount of urinary nitrogen far in excess of the intake. This relation is not peculiar to the one form of chronic nephritis rather than the other, nor does prolonged retention necessarily excite uremic attacks. Particular kinds of diet have little influence on the condition; nor does the amount of water ingested give rise to considerable differences in the nitrogen excretion. Up to the present time these striking variations in nitrogenous output cannot be definitely explained. Attempts are being made to differentiate chronic parenchymatous and interstitial nephritis by the use of phenolsulphonephthalein but the work at the present time is insufficiently controlled by autopsy findings and is not to be accepted as final.

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* Presented before the County Medical Society of Philadelphia as part of a Symposium on Nephritis, March 8, 1911.

Before discussing the chemistry of the accidents or complications of nephritis it may be well to briefly consider the variations in the normal constituents of the urine caused by the nephritic process and to consider the elements new to the urine as a result of the disease.

It is but natural to expect that the amount of urea in the urine of nephritics is subject to the same variations as have been indicated in discussing nitrogen. Not only do the amounts of urea and nitrogen excretion parallel one another, but in addition the amount of ammonia follows the same curve. Most recent observations lead to the belief that much of the ammonia in the urine, either normal or pathologic, is the result of decomposition; but urine preserved under uniform conditions would show variations in ammonia dependent largely on the variations in the amount of urea. Uric acid and the purins show very much less variation than the urea, although occasional cases occur in which retention of uric acid occurs; in such cases, however, the retention of urea is considerably greater than that of the uric acid. Under normal conditions the amount of creatinin in the urine is quite constant. In nephritis, however, it is said to be subject to considerable variation, but the question is one that is by no means settled. The most important feature in connection with this phase of the subject is that the older theory holding creatinin retention to be the cause of uremia has been abandoned. In the same way, the question of the amount of hippuric acid in the urine is unsettled.

Turning to the inorganic salts, we find that phosphates and sulphates are retained and eliminated in amounts parallel to that of nitrogen. This is not true, however, as regards the chlorids for, although numerous cases can be found in which the chlorid output is fully equal to that of the normal patient, yet in other cases considerable deviations from the normal may occur. These deviations may be of three types: (1) a marked daily variation, even with a uniform diet; (2) a marked excess of chlorid output, in which case the patient is usually one recovering from a period of retention, such as might be seen in an acute or subacute attack of nephritis or in patients with a disappearing edema; (3) a notable retention of chlorids. In the last group some instances are those of more or less permanent disability to excrete chlorids on the part of the kidney, a condition not especially relieved by dietary restriction; whilst, on the other hand, some instances represent a temporary embarrassment of the kidney, due to relative or absolute excess of chlorids in the diet, a condition which is relieved by diminishing the dietary chlorid intake for a short period, during which time the organ often regains its normal power of chlorid excretion.

Of great importance in connection with the variations in these normal urinary constituents is the excretion of water by the kidney. The bearing that this has on the chemistry of the organ is that excesses of water excretion aid in excretion of solids, and diminution of water excretion hinders the output of solids. The question of water excretion in this connection, however, seems more that of the physiologist than of the chemist.

Of the abnormal constituents of the nephritic urine, albumin is of most importance and interest. The albumins found are especially serum-albumin, serum-globulin and nucleoprotein. In dietary excesses in the presence of a normal kidney the albumin found in the urine is that which has been ingested. In kidney disease the same phenomenon, with but slight modification, may be observed. The identity of these proteins has been proved by the precipitin test. The serum albumin is almost always found associated with globulin in the urine and various attempts have been made to attach diagnostic importance to the relation between the two. This has failed, however, except possibly in the case of amyloid kidney, in which the amount of globulin is said to exceed that of the serum-albumin. It has also been claimed that in cases of cyclic albuminuria the albumin present is largely in the form of a protein, very much like, or identical with, one of the serum-globulin fractions. Nucleoprotein is of especial significance in connection with acute nephritis and fever cases. Albumose has no direct bearing on nephritis and when present in this disease represents a hydration of the urinary albumin present as a result of the disease. Why the kidney is impervious to the serum-proteins in health and pervious to them in nephritis remains an open[19] question. Nor is it helped by the reflection that cell-proteins (e. g., hemoglobin) and protein-products (albumose) pass through the normal kidney without apparent resistance on the part of the organ.

III. METABOLISM, EXCRETION AND RETENTION IN NEPHRITIS WITH UREMIA

The accidents of nephritis, particularly uremia and edema, present much for study by chemical and physiologic methods. Uremia is certainly a toxic condition and many attempts have been made to identify the particular toxic agent responsible for it. Theory after theory has been discarded, with the result that the problem still remains unsolved. Nevertheless, certain phenomena of metabolism in the process have been worked out very concisely. Nitrogen excretion in uremia is usually low, but that it is the cause of the condition is combated by the fact that many nephritics show depressed excretion of nitrogen and are quite free from symptoms of uremia. Much more insistent claims have been made for intermediate products of protein metabolism, such as uric acid, carbamic acid and ammonia, as the etiologic agents in uremia, but more careful research has shown that even though these substances are retained they are not responsible for the condition. Inorganic salts have been held responsible for uremia and the discovery that the urine of uremics is of higher molecular concentration than normal led to the inference that the increase was due to salt concentration.

The fact was soon discovered, however, that increased molecular concentration appears in other diseases than nephritis and without uremia, and further, that the increase cannot be due to inorganic salts, because the urinary electrical conductivity remains the same as for normal urine. Alterations in the supposed internal secretions have been held accountable for the phenomenon and many experiments have been brought forward to support the view, but the most recent work indicates that the kidney in all probability has no internal secretion and the older work in partial nephrectomy, ligation of ureters and administration of extracts of kidney, has been held to be insufficient to prove the point.

That some toxic agent is at work cannot be denied, and numerous recent writers consider that it is in the nature of a specific lysin for kidney substance—a nephrolysin. That nephrolysins can be produced by artificial immunization of animals is quite true, but that they are absolutely specific for the kidney is open to grave doubt, and according to most observers their administration is attended by distinct lesions of other tissues, including the blood. The production of autonephrolysins, that is, by the animal for its own kidney, fails of conclusive demonstration. Nevertheless, it has been shown that the serum of nephritic dogs contains a substance which on injection into other dogs produces a true nephritis. It is suggested, however, that this fact be applied to the pathology of nephritis only after further evidence has been adduced to support it. As material accumulates on this subject it seems evident that if the toxin is a nephrolysin, it probably is not identical with the nephrolysin obtained by artificial immunization. That seen in nephritis must have a much higher degree of specificity than the experimental product.

The relation of uremia to gastro-intestinal conditions frequently is brought forcibly to the attention of the clinician. Whether the gastro-intestinal condition, or the uremia, is the primary event is as yet an unsolved problem. Some experimental workers think that uremia produces toxins that are excreted into the intestinal tract and that these are of irritant nature. Recent work in nitrogen metabolism indicates that a large percentage of nitrogen is eliminated into the intestine and reabsorbed, but as yet there is no definite evidence to indicate that this process is associated with any distinct toxic elements. If intestinal conditions can produce the toxemia which we know as uremia, no acceptable evidence has been adduced to prove it.

IV. METABOLISM, EXCRETION AND RETENTION IN NEPHRITIS WITH EDEMA

Explanations of edema in connection with nephritis call into play physical, physiologic and chemical observations. Of great importance to the clinician are hydremia and chlorid retention, for these two factors are capable of control in the diet of the patient. Experimentally, hydremia appears to be absolutely necessary to the production of edema, and clinically it is generally conceded that some degree of hydremia plays an important part.[1] Lesions in the vessel walls, whether depending on the hydremia or on some toxic substance, possibly an endotheliotoxin, also influence the condition. From the standpoint of chemistry the question of chlorid retention comes more prominently to the fore than in any of the other phases of nephritis. That chlorids are retained in cases of edema and that increased elimination of chlorids appears at the time of disappearance of the edema are well-established facts.

The chief point under discussion at the present time, as to whether the retention of chlorids or the retention of water is primary, remains an open question. If the retention of water be primary, it requires sodium chlorid to balance the osmotic pressure in the blood. If the sodium chlorid retention is primary, the same need for balance of osmotic pressure is felt and water is retained. If the sodium chlorid occurs particularly in the tissues, then the attraction of water to the tissues is easily explained by the same necessity for equalization of osmotic pressure. Numerous views have been expressed pro and con, and experiment has been adduced for and against, but the matter remains in a somewhat chaotic and distinctly unsatisfactory state.

V. VASCULAR HYPERTENSION AND CARDIAC HYPERTROPHY

From the chemical point of view, so little has been done on the question of heart hypertrophy and vascular hypertension in chronic interstitial nephritis that it requires little discussion. Granting that the internal secretion of the kidney is a problematic factor we must turn to retained toxic substances or to the influence of other internal secretions, particularly that of the adrenal, for the explanation. Experimental, anatomic and physiologic work have appeared to throw some light on this phase from time to time, but as new facts have been brought out old ones have been controverted or minimized and to-day none of these branches of pure science can offer much for the satisfaction of the eager clinician.

What has been presented in this brief communication represents the results of years of ardent and careful work on the part of clinicians and laboratory men, working either separately or hand in hand. If there remains much to be learned, that does not minimize what has already been well established. As methods are improved and observation and deduction become more accurate, the results will become more applicable to the living human patient.

In this review I have drawn freely on the works of Von Noorden, Pearce, Bainbridge and Beddard and others, in addition to the most recent articles in current medical literature.

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[1] Edema has been produced recently without introduction of excess of water into the animal, but this does not exclude hydremia as an essential factor in the development of the condition.

CLASSIFICATION OF DIPHTHERITIC CONJUNCTIVITIS

REPORT OF A CASE WITHOUT MEMBRANE FORMATION *

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The following case is reported because of the very severe catarrhal conjunctivitis due to diphtheria bacilli, which ran its course without the development of a membrane.

History.—The patient, a physician, aged 56, consulted me Jan. 25, 1908, for a very mild conjunctivitis of the right eye, the left being unaffected. The eye had been uncomfortable since the day before and he feared that some irritant like formaldehyd solution had caused the trouble. The irritation was chiefly in the inner canthus.

Course of Disease.—A 5 per cent. solution of argyrol was ordered but the condition did not improve and rather increased in severity.

January 27: Some of the secretion was sent to a bacteriologist, who reported that it contained bacilli but he was unable to determine them from the slide specimen.

January 29: The lids became greatly swollen and the eyes teared profusely. There was no purulent solution. The patient now complained of some discomfort of the nose and throat and a prominent rhinologist examined them and reported congestion of the pharynx and tonsils. The right tonsil was more prominent and there was an indistinct yellowish line near the posterior pillar in the long axis of the tonsil. Two prominent colleagues were called in, who likewise were unable to account for the ocular condition and its resistance to treatment.

January 30: The condition remained almost the same, the temperature being slightly elevated to 100 F. The patient was somewhat depressed, which was attributed to worrying about his condition. The pathologist suggested that the organism which had been handed to him was suggestive of diphtheria and he requested a smear from the edge of the lid. This was taken, as was one from the pharynx, and I may say that while the smear from the edge of the lid did not develop any organisms, the pharyngeal smear gave a typical growth of the diphtheria bacilli, and the pathologist was convinced that the organisms in the first slide were identical with these. The membranous rhinitis and pharyngitis meanwhile increased and large masses were subsequently thrown off.

January 31: The condition was as follows: There was no membrane formation in the conjunctiva of either lid. The edema of the conjunctiva of the eyeball was very marked, as was also that of the lids. The cornea showed considerable irregularity of the epithelium without any ulceration. This had been noticed a day before. Along the intermarginal space when examined with a magnifying glass a few very fine gray spots were seen which could not be rubbed off with a cotton pledget. On this day, 2,000 units of antitoxin were given and in the evening 5,000 more. Within the next two days additional quantities of antitoxin were injected, making a total of 40,000 units.

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* Read at the joint meeting of the Sections on Clinical Medicine and on Ophthalmology, Baltimore City Medical Society, Jan. 20, 1911.

February 1: Cultures taken from the eye were negative to diphtheria but showed staphylococci. The patient's condition improved after the use of antitoxin.

February 6: The temperature was normal; there was diminution of the secretion.

February 7: The nose began to give trouble and there was nosebleed; at this time the eyes again became more painful.

February 9: On this date I observed a faint superficial opacity running across the anterior of the cornea. The patient was now treated locally with argyrol and later with dionin, and the cornea became clearer though the central opacity remained. In the meantime the vision became almost half normal.

Subsequent History.—During the following June, the eye became congested and painful, and there was again breaking down at the side of the ulcer. The inflammation became rather intense and some hypopyon developed. Several weeks were required for recovery.

The peculiar course of this disease and the finding of the diphtheria bacillus in the fauces and the discovery of the same bacillus in the smear, though at first not recognized as diphtheria, with the undoubted diphtheritic appearance of the nasal and pharyngeal inflammation, seem to establish this as a case of diphtheritic conjunctivitis without membrane formation, in spite of the absence of the more convincing tests.

The inflammation in this case, while resembling the conjunctivitis due to the Koch-Weeks bacillus or to pneumococci, differed clinically, especially at first, in the absence of mucous or purulent secretion, in the resistance to ordinary treatment and in the appearance of the minute spots along the intermarginal border. Later, mixed infection occurred, as is not uncommon. The age of the patient is exceptional. Noll[1] has reported a patient aged 61, but he was able to find only a very few reported cases in adults (Kasztan, whose patient was 23 years old; Zur Nedden, whose patient was 17 years of age; Jessop,[2] whose patient was 29 years of age; and Schanz).

In the case here recorded it seems probable that the eye was the primary seat of infection, for the earliest nasal and pharyngeal symptoms made their appearance several days after the onset of the conjunctival disease.

A number of attempts have been made to substitute a bacteriologic basis for that of the clinical appearance in the classification of conjunctival diphtheria. Schirmer[3] pleads that we call all conjunctival inflammations due to diphtheria bacilli, diphtheritic conjunctivitis, it matters not what the clinical picture. Fuchs[4] in his textbooks takes the same view, distinguishing between superficial and a deep necrotic form. Luedde[5] contends against the old classification. Jessop[2] goes further and suggests that all cases of conjunctivitis with membrane should be merged into one class called "membranous conjunctivitis" or "membranous ophthalmia." . . . He would "like to see the term diphtheritic conjunctivitis disappear, as it is most confusing." On the other hand, many writers still hold firmly to the old classification, foremost among them being Saemisch[6] in his monumental work.

It is clear that accurate diagnosis and treatment as well as prophylaxis demand that we do away with the confusion. There is no possible reason why we should use one nomenclature for the pharynx and another for the conjunctiva. The term "diphtheritic" should in the future be applied only to inflammations produced by the diphtheria bacillus.

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[1] Noll: Arch. f. Augenh., lix, 14.

[2] Jessop: Tr. Ophth. Soc. U. Kingdom, 1902, xxii, 58.

[3] Schirmer: Arch. f. Ophth. (Graefe's), 1894, xl, No. 5, p. 161.

[4] Fuchs: Augenheilkunde, sixth German ed., p. 96.

[5] Luedde: Am. Jour. Ophth., 1907, p. 231.

[6] Saemisch: Graefe-Saemisch Handbuch der gesamten Augenheilkunde, v, Part I, p. 332.

CARBON MONOXID POISONING RESULTING IN GANGRENE OF BOTH LEGS

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The ordinary clinical picture of carbon monoxid poisoning is almost too well known to demand description. Carbon monoxid is a gas which, being colorless and tasteless, is usually inhaled unconsciously. Most cases of poisoning occur during sleep. It is an exceedingly poisonous gas. The method by which it produces its direful and fatal effects is by forming with the blood coloring-matter a compound which is more stable than oxyhemoglobin.[1] The affinity of carbon monoxid for hemoglobin being 200 times greater than that of oxygen, it causes asphyxia by destroying the power of the blood-corpuscles to carry oxygen from the air to the tissues.

The symptoms encountered when a considerable amount of this gas has been inhaled are vomiting, languor, headache, debility, etc., leading to deep unconsciousness, with shallow breathing, rapid pulse, cold, clammy perspiration and, finally, death. With active treatment patients in extreme conditions often recover, but on account of the stability of the carbon monoxid compound formed with the blood coloring-matter, the symptoms of languor, etc., often are very persistent, lasting until the coloring-matter, rendered useless by the carbon monoxid, is replaced by a new formation. This time is very variable and may last from several days to several weeks, when the condition of the patient again gradually becomes normal. This gradual return to normal is not, however, always uneventful. Nervous symptoms, even simulating insanity,[2] cerebral hemorrhages,[3] usually occurring in the caudate nucleus and optic thalamus, hemiplegia,[4] nutritive changes in the brain and skin,[5] etc., all have been recorded as occurring after carbon monoxid poisoning in persons apparently normal up to the time of the accidental inhalation of the gas.

I report herewith a case of carbon monoxid poisoning, followed by a very stormy convalescence, characterized by a clinical picture which is rare—indeed unique, for nowhere in the literature of the last decade have I been able to find a similar report. The case is one in which the carbon monoxid poisoning was followed by gangrene of both legs, necessitating amputation. The history of the case is as follows:

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[1] Ueber symmetrische Gangrene, Ztschr. f. Heilk., 1882, iii; Wien Klin., 1882, Nos. 10 and 11.

[2] Certain Alterations in the Blood and Lungs in CO Poisoning, Kharkow Med. Jour., 1908, v, 447.

[3] Hirnblutung bei CO Vergiftung, München, med. Wchnschr., 1909, lvi, 1211; Gehirnblutung im Folge einer Kohlenoxydvergiftung, Aertzl. Sachverst-Ztg., Berl., 1908, xiv, 135.

[4] Fall von Hemiplegia nach Kohlendunst. München. med. Wchnschr., 1903, l, 757.

[5] Ueber Ernährungstörungen des Gehirns und der Haut nach CO Vergiftung (Haufgangrene), Wien. med. Wchnschr., 1905, lv, 1621.

J. H., male, aged 22, American by birth, was admitted to Harper Hospital Dec. 20, 1909. The patient's family and previous history were unimportant. There was no specific history. On the morning of Dec. 20, 1909, the patient was found unconscious in his bed in a room in which there had been burning a small gas-burner, from which the flame had become extinguished during his sleep. He was immediately sent to the hospital and on admission at 11 a. m. there were present profound unconsciousness, slow, shallow respiration and a rapid, thready, uncountable pulse. He had involuntary evacuations from his bladder and his body was covered with a cold clammy perspiration. Shortly after admission his temperature was 102 F. The leukocyte count, differential and absolute, was normal. The red blood-count was normal, but there was present a marked degeneration of red blood-cells, with a striking tendency to clumping, each clump with a nucleus of débris taking a deeper stain. The hemoglobin index was 40 per cent. The diagnosis was carbon monoxid poisoning. From inquiry at the chemical laboratory of the City Gas Company, it was determined that the gas inhaled by the patient was illuminating gas and that the most actively poisonous ingredient, carbon monoxid, was present in the proportion of 7 per cent. A lesser percentage will readily produce poisoning.[1] Forty-eight hours after admission, during which time stimulation, artificial respiration and oxygen inhalation had been resorted to almost continuously, the patient had regained sufficient consciousness to speak. His pulse and temperature gradually approached the normal. By the end of the fourth day he was able to sit up; on the fifth day he walked about a little. He was dismissed on the evening of the fifth day apparently in good condition, complaining, however, of pain in the feet and legs.

December 27, two days after leaving the hospital, he was again admitted on account of the increasing pain in the feet and legs. Examination showed that the legs and feet were swollen and slightly discolored in patches, the discoloration extending below the knees, somewhat higher on the right than on the left side. The limits of the discoloration were rather sharply defined. The discolored portions were cold, and sensation was practically absent. During the next two weeks the pain in the legs continued, at times being so severe that it necessitated the administration of opiates. The discoloration increased to gangrene, the dorsum of each foot being seemingly attacked last. The legs became edematous.

January 7, longitudinal incisions were made to determine the condition of the deeper tissues. These were found to be necrotic, with all the appearances of moist gangrene. Culture showed pure growth of *Staphylococcus aureus*. Up to this time the patient's condition was extreme; he was delirious at times, with an irregular temperature curve ranging between 101 and 105 F.; pulse 130 to 160, systolic blood-pressure 110 mm. The blood-picture showed a marked leukocytosis with 85 per cent. polymorphonuclear leukocytes.

January 9, the right leg was amputated, and January 13 the left leg. For the remaining part of January the patient's condition was very critical. Bed-sores developed over the sacrum and on either buttock. The flaps of the left stump sloughed away. There was profuse sweating practically all the time. January 16, the blood examination showed hemoglobin 55 per cent. The red cells numbered 4,376,000, but were degenerated and very pale. The leukocytes were diminished in number. The blood itself was very watery and showed practically no tendency toward clotting.

About the middle of February the patient began to improve generally and the stumps showed evidences of granulations around the skin margins. On March 19 he was anesthetized (ether narcosis) and the stumps were trimmed; the right tibia and fibula were disarticulated at the knee-joint, and a portion of the condyles of the left femur were removed. From this time convalescence was uneventful; the stumps made good progress, being almost completely closed over at the time of his dismissal one month later.

The patient was dismissed April 15, 1910, practically four months from the time he was asphyxiated.

This case demonstrates that the effects of carbon monoxid poisoning are more far-reaching than is generally supposed. It also demonstrates that although recovery may be apparently complete, yet after the lapse of a few days or (as in some cases reported in the literature, reference to which will be appended below), even a few weeks the most startling and irreparable damage to the human organism may become evident as a result of the inhalation of this gas.

The question naturally arises: What is the exact pathologic condition which occasions such a wide-spread destruction of tissue, as, for instance, gangrene of both legs in the case above reported? In this case diabetic gangrene, chemical gangrene, senile gangrene and gangrene from exposure to extremes of temperature can all be excluded. Thrombotic and embolic gangrene, too, can be excluded, at least in this case, as after a careful search for thrombi and emboli our findings were negative. Some writers, however, report cases of thrombosis[6] following carbon monoxid poisoning. Such a case occurred in the practice of Dr. William J. Seymour some years ago.

A man aged 45, entered St. Mary's Hospital, Detroit, unconscious from carbon monoxid poisoning. He remained unconscious for about twenty-four hours, after which he complained of headache, stupor and a general languid feeling. On the fifth day he complained of considerable pain in his left arm, after which the hand and forearm became immensely swollen and edematous. This condition of pain and swelling persisted for about four weeks; then it gradually subsided. The diagnosis here was thrombosis of the axillary vein.

There certainly was no such picture in my case. Besides, if due to thrombosis, the gangrene would more probably have been unilateral. What then was the condition to which the gangrene in this case could be attributed? Was it an angioneurotic gangrene—the poison having affected the trophic nerves or the trophic cells in the anterior part of the cord, causing degenerative changes, thus disturbing their functionating power, which became manifest first by an angiospastic anemia, or, as Weiss[7] calls it, a "regional ischemia," resulting finally in gangrene? Or was it due to the constitutional, or rather the general, altered condition of the blood, the nutritive powers of which had been so enormously diminished by the sudden formation of the carbon monoxid-hemoglobin compound, that the parts in which normally the circulation is poorest, i. e., the lower extremities, would naturally become affected first?

Of the first proposition I can say but little definitely, for I had no way of determining whether or not the degenerative changes really did take place in the trophic nerve-cells or their fibers. Any conclusion I could draw from this as to the primary pathologic condition causing the gangrene in the extremities would, therefore, at best be but problematical.

As to the second proposition, the altered nutritive value of the blood, we know that the hemoglobin is the oxygen-carrier of the blood, and that this oxygen carried by the blood is absolutely essential to the life of the body tissues. If, for some reason or other, the normal supply of oxygen is disturbed and a sufficient amount prevented from coming into contact with the tissues, these will suffer and, depending on the amount of oxygen of which they are deprived, gangrene or other nutritive changes will result. Such is the condition which it seems we had to contend with.

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[6] Hirnblutung und Erweichung bei CO Vergiftung, Strassb. med. Ztg., 1909, vi, 165.

[7] Korsakoffsches Syndrom bei CO Vergiftung, Berl. klin. Wchnschr., 1908, xlv, 1621.

Hemoglobin, once converted into carbon *monoxid* hemoglobin, is useless for the body economy. This compound is stable and for this reason oxygen can never displace the carbon monoxid. After carbon monoxid poisoning, the normal oxygen supply to the body will take place only when a new supply of hemoglobin has been furnished; in other words, the tissues must wait for their normal oxygen supply until such a time as the body will again be able to furnish or manufacture, if you will, a sufficient supply of hemoglobin to carry the oxygen to its different parts. If, in the first place, the amount of carbon monoxid inhaled is so great as to combine with all the hemoglobin of the blood, the condition resulting (i. e., 100 per cent. carbon monoxid hemoglobin, 0 per cent. hemoglobin or oxyhemoglobin), is incompatible with life and the patient dies immediately. If, on the other hand, the amount of carbon monoxid inhaled is such that it combines with only part of the hemoglobin of the blood, the condition resulting (say, 50 per cent. carbon monoxid hemoglobin and 50 per cent. hemoglobin or oxyhemoglobin), is such that the patient will live, but the tissues will not receive the necessary supply of oxygen for the performance of their normal functions. This insufficient supply of oxygen will continue until the time when the new formation of hemoglobin can take place. During this time, the hemoglobin which is free from carbon monoxid must supply the oxygen to the tissues as best it can. The amount thus supplied may be sufficient to sustain life in every part of the organism. If it falls short of this, the parts in which circulation normally is poorest will first show the effects of insufficient oxygenation. This condition, I think, is well illustrated in the case reported. Here, hemoglobin, sufficient to cause grave constitutional disturbance and death of both extremities (the parts normally sparingly supplied with blood), but not sufficient to cause the death of the organism, was rendered inert by the formation of the stable carbon monoxid hemoglobin compound.

According to experiments by Nasmith and Graham[8] made on guinea-pigs, the time for the new formation of hemoglobin is variable, three to four weeks usually elapsing before the oxygen-carrying power of the blood again becomes normal; i. e., before compensation takes place by an increased number of red blood-cells and hemoglobin content. At the end of this time the irreparable damage, as in the case reported, will have been done and the best that can then be expected from the compensation is to improve the vitality of those parts which have not been starved beyond repair: in other words, which have *not gone on to the stage of gangrene.*

This explanation of the gangrene following carbon monoxid poisoning seems plausible to me. Sufficient proof, however, is not at hand to determine this fact definitely. Yet, on considering the exact mode of onset in this case—how the gangrene did not commence at the toes and travel progressively upward, but how islands of comparatively healthy tissue were left in which vitality seemed to persist longer than even some more proximal parts—on considering other cases of gangrene of the skin reported, in which the gangrenous patches were usually distributed irregularly over the body where the activity of the peripheral circulation is often impaired even normally, I feel more than ever that the diminished nutritive value of the blood brought about by the formation of carbon monoxid hemoglobin is the most probable cause of the localized gangrenous condition.

57 Fort Street, West.

NOTE.—References additional to those numbered in the text of the article are as follows:

Knecht: Deutsch. med. Wchnschr., 1904, xxx, 1242.
Hoffman: Virchow's Arch. f. path. Anat., 1865, xxxii, 450.
Klebs: Berl. klin. Wchnschr., 1891, No. 45.
Litten: Deutsch. med. Wchnschr., 1889, No. 5.
Alberti: Ztschr. f. Chir., Aug. 25, 1884, p. 476.
Hasse: Berl. klin. Wchnschr., 1891, No. 45.
Tod durch Einatmen von Kohlengas, etc., Friedreich's Bl. f. gerichtl. Med., 1904, lv, 66.
Durch Kohlengas Vergiftung erzeugte juvenile Hemiplegia, Pest. med.-chir. Presse, Budapest, 1904, xl, 25.
Ueber Schwere Anaemie mit Hyperglobulie als Folgezustand chronischer Kohlenoxydvergiftung, München. med. Wchnschr., 1904, ii, 739.
A Case of Poisoning by Illuminating Gas, New York Med. Jour., 1904, lxxx, 404.
Erkrankungen des Nerven-Systems nach CO, Deutsch. med. Wchnschr., 1904, xxx, 1242.
Zur Kentniss der Gehirnerkrankungen nach Kohlenoxydvergiftung, Ztschr. f. klin. Med. Berl., 1903, iii, 137.
Studies on the Effects of CO Poisoning, Proc. Soc. Exper. Biol. and Med. N. Y., 1908-9, vi, 68.
Ueber die Einwirkung von Giften auf die Gefässwandung, Wien. klin. Rundschau, 1909, xxiii, 241.
A Case of CO Poisoning, Tr. Royal Acad. Med. Ireland, 1905, xxiii, 376.
The Hematology of CO Poisoning, Jour. Physiol., London, 1906-7, xxxv, 32.
Ueber die aufnahme des Kohlenoxyds durch das Nervensystem, Ar[illegible] Pharmacol., Leipsic, 1906-7, lvi, 201.
[illegible] Med. Klin. Berl., 1907, iii, 146.
Ueber eine Spa[illegible] und Nachwirkung des im Betriebe eingeatmentem Kohlenoxyds, Berl. klin. Wchnschr., 1907, xliv, 1367.
Death from the Effects of CO, Brit. Med. Jour., London, 1908, ii, 1899.
Three Cases of Poisoning by CO; One Recovery, Lancet, London, 1908, p. 558.
A Case of Poisoning by CO, Occidental Med. Times, San Fran., 1903, xvii, 334.
Polyneuritis Following CO, Pest. med. chir. Presse, Budapest, 1903, xxxix, 965.
A Case of Poisoning by CO, Lancet, London, 1905, ii, 1894.
Poisoning by Coal Gas, Wisconsin Med. Jour., 1906-7, p. 73.
Zur Untersuchungen des Kohlenoxyds Vergiftung, Berl. klin. Wchnschr., 1904, xli, 1233.
A Case of Acute Dementia and Mental Stupor Following Illuminating Gas Poisoning, Jour. Nerv. and Ment. Dis., 1905, xxxii, 332.
Die histologischen Verletzungen in CO Vergiftung, Friedreich's Bl. f. gerichtl. Med., 1905, lvi, 251.
Hektoen and Riesman: American Text-Book of Pathology, W. B. Saunders Co., 1902, p. 377.

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[8] Jour. Physiol., 1906-7, xxv, 32.

A NEW METHOD OF COUNTING THE BLOOD-PLATELETS FOR CLINICAL PURPOSES

AND SOME OF THE RESULTS OBTAINED WITH IT [*]

JAMES HOMER WRIGHT, M.D.

AND

ROGER KINNICUTT, M.D.

BOSTON

A number of methods[1] have been employed for estimating the number of blood-platelets per cubic millimeter of blood, but none of them has seemed to us practical or satisfactory for clinical purposes. A new method has therefore been devised, and it is as follows:

The blood is mixed with a diluting fluid in the proportion of 1 to 100 by means of the pipette used for counting red blood-corpuscles, and the counting is done in an ordinary blood-counting chamber with a high power dry objective. In order to render the platelets more clearly visible, the specially thin cover-glass of Zeiss, with central excavation, is used (cover-glass No. 146, Zeiss catalogue). This may be obtained from Eimer & Amend, 205 Third Avenue, New York. The diluting fluid consists of two parts of an aqueous solution of "brilliant cresyl blue" (1:300) and three parts of an aqueous solution of potassium cyanid (1:1,400). These two solutions must be kept in separate bottles and mixed and filtered immediately before using. Of course, the pipette should be well shaken before withdrawing the sample for counting. After the counting chamber is filled it is left at rest for ten or fifteen minutes in order that the blood-platelets may settle to the bottom of the chamber and be more easily and accurately counted.

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[*] From the Pathological Laboratory of the Massachusetts General Hospital.

[1] The methods and observations of most other workers *in this* field are well described and summarized in the papers by J. H. Pratt (A Critical Study of the Various Methods Employed for Enumerating Blood-Platelets, THE JOURNAL A. M. A., Dec. 30, 1905, p. 1999), and by Kemp, Calhoun and Harris (The Blood-Plates: Their Numeration in Physiology and Pathology, THE JOURNAL A. M. A., April 7, 1906, p. 1022, and April 14, 1906, p. 1091).

References not given in these papers are: Howlett: Lancet, London, 1882, i, 223. Osler: Medical News, April 3, 1886, p. 365. Eschistowitsch: Folia hæmotol., Berl., iv, 295. Cadwalader: Bull. Ayer Clin. Lab. Penn. Hosp., No. 3, 1906, p. 50.

The platelets appear as sharply outlined, round or oval, or elongated, lilac-colored bodies, some of which form a part of small spheres or globules of hyaline, unstained substance.

The red cells are decolorized and appear only as "shadows," so that they do not obscure the platelets. The nuclei of the white cells are stained a dark blue, the protoplasm light blue. If the technic is correct there should be no precipitate in the preparation.

The cresyl blue solution is permanent, but should be kept on ice in order to prevent the growth of yeasts. The cyanid solution should be made up at least every ten days. It is, of course, necessary that the solution be made from pure potassium cyanid, which has not undergone decomposition. As already stated, the two solutions must be mixed and filtered immediately before using, because after filtration, if the mixture is allowed to remain exposed to the air for a short time, a precipitate will form in it. After the diluting fluid has been mixed with the blood in the pipette, however, no precipitate forms and, as the platelets do not quickly break up in the mixtures, the counting may be done after some hours, if necessary. For example, a count immediately after filling the pipette was 258,000, and another count from the same filling of the pipette made eighteen hours later was 253,000.

A proper technic yields a remarkably even distribution of the platelets in the chamber. For all practical purposes the counting of the platelets in 100 small squares is sufficient, but for greater accuracy all 400 small squares should be counted, or 200 small squares in each of two fillings of the chamber.

Table 1 is a sample count showing the even distribution of the platelets in the counting chamber:

TABLE 1.—PLATELETS COUNTED IN A ROW OF TWENTY SMALL SQUARES

—Chamber 1.—		—Chamber 2.—	
22	21	21	25
27	28	21	23
27	24	27	22
23	30	22	25
21	21	23	31
120	124	120	126

By our method the platelet count of normal adults is found to vary from 226,000 to 367,000 per cubic millimeter, the general average being 297,000. Table 2 is a table of counts of normal individuals, all adults males.

TABLE 2.—COUNTS OF BLOOD-PLATELETS IN NORMAL INDIVIDUALS

Normal Individuals.	No. of Counts.	Over period of	Average.	Highest.	Lowest.
A	23	1 year	272,000	328,000	226,000
B	5	2 weeks	336,000	367,000	297,000
C	2	1 week	305,500	319,000	292,000
D	4	10 days	263,500	272,000	252,000
E	2	1 week	332,000	347,000	317,000
4 individuals, 1 count each			273,250	330,000	224,000

The objection has been made to the methods of platelet enumeration involving the use of a mixing pipette, that the counts obtained by them are too low because many of the platelets stick to the glass of the pipette and thus escape observation. We do not think that this objection applies to our method, for the following reasons:

1. When blood and, immediately afterward, the diluting fluid are drawn up into a capillary pipette, microscopic examination does not reveal any platelets sticking to the glass.

2. Our normal counts range higher than those of all other observers who have employed methods involving the use of a pipette, except one. Thus, the highest count among the large number of counts contained in the reports of Cadet and others is only 310,000. The exception is the count of *"kaum ½ million"* stated by a reviewer to have been found by Prus for normal blood in contrast to 2,000,000 for leukemic blood. This inexact numerical expression might very well mean a count, or counts, for normal blood not greatly in excess of our own. Van Emden, however, used Prus' method and obtained normal counts which do not range as high as our own. He attributed Prus' apparently high normal figure to fragmentation of the blood-cells by too much shaking of the pipette.

3. Our normal counts do not differ significantly from those obtained by several observers who used methods based on the determination of the ratio between the platelets and the red corpuscles. Thus, Pizzini obtained figures varying from 250,000 to 370,000 among fifty-seven counts made on seven healthy persons to determine the possible effect on the numbers of the platelets produced by digestion, heat, cold and fatigue; Determann among twenty-five normal bloods found counts varying from 180,000 to 250,000, if we assume that the red corpuscles count for each was 5,000,000; and Cadwalader, in nine counts on two normal persons, found 259,360 to 400,000 the average being 348,000.

Certain other observers, however, working with ratio methods, have reported higher normal counts than those just mentioned, but we believe that their methods were erroneous and that their results are not reliable.

Thus, Brodie and Russell used a diluting fluid consisting largely of glycerin, which is destructive to red corpuscles, and therefore the ratios which they obtained are obviously not to be relied on as being the true ones.

Kemp and Calhoun report twenty counts from thirteen normal persons, ranging from 730,000 to 962,000. In a later paper, however, they report that they found fifteen ratios of platelets to red corpuscles in five normal men, determined on the same three successive days, to vary from one to eighteen to one to twenty-three, which, on the basis of 5,000,000 red corpuscles to the cubic millimeter, would represent counts of only about 217,000 to 270,000. Such a marked discrepancy between these two sets of counts seems to us to be sufficient to discredit their method and the high counts which they obtained with it.

J. H. Pratt found in seven normal individuals counts agreeing with ours (226,000 to 377,000), but in eighteen others his counts vary from 416,000 to 725,000. In view of the results of other workers, this seems to us to be a wider degree of variation in normal individuals than can be accounted for by any supposed superiority in his method, and we therefore believe that these higher counts should not be accepted.

4. The closeness of successive counts from the same individual and the high counts obtained in certain diseases are also good evidence. For example: 257,000, 271,000 and 263,000 from a normal individual; 698,000 and 708,000 from a case of hemophilia; and 1,130,000 and 1,077,000 from a case of anemia after hemorrhage. These results seem to us to be incompatible with any important loss of platelets by sticking to the glass. If there be a loss of platelets, it must be a constant factor which does not vitiate the usefulness of our method for determining the fluctuations in the numbers of the blood-platelets.

We have counted the platelets by this methods in a considerable variety of diseases, studying especially their numbers in anemia, in typhoid fever and in pneumonia, and the results obtained are summarized below. Our observations fully confirm those of Hayem and others in the three diseases mentioned.

In secondary anemia we have found the blood-plate count to be generally high, while in pernicious anemia we have found it to be always low at some period of the disease. Thus, in seven out of nine cases of secondary anemia, counts above 400,000 were obtained, while in none of the cases was a count below normal found. The highest counts were 1,130,000 and 1,162,000 obtained in two cases due to hemorrhage. On the other hand, in nine cases of pernicious anemia the twenty-three counts made varied from 20,000 to 161,000 while the tenth case showed a count of 381,000, which fell to 172,000 ten days later.

In view of these observations, it would seem that the platelet count will prove to be of material assistance in distinguishing between the two forms of anemia in doubtful cases.

This contrast between the two forms of anemia in the platelet content of the blood is readily explained by the following considerations: It is well known that in secondary anemia an hyperplasia of the red marrow of the bones takes place sooner or later and thus an increase is brought about in the number of the marrow giant cells, the megakaryocytes, which have been shown by one of us,[2] to produce the blood platelets by the fragmentation of their cytoplasm. Consequently, the number of the platelets in the blood is increased. On the other hand, the diminution in the number of the platelets in the blood of pernicous anemia is explained by the observation of one of us that the peculiar red marrow of this disease, although greater in amount than normal red marrow, regularly does not contain as many giant cells as does normal red marrow or the hyperplastic red marrow of secondary anemia.

In two cases of chlorosis, normal counts were noted, while in a case of splenic anemia a count of 75,000 was obtained.

In three out of four cases of lymphocytic leukemia, one being of the large cell type, the counts were lower than normal, ranging from 37,000 to 130,000. We attribute the low counts to lymphomatous transformation of the bone marrow, with consequent reduction in the number of marrow giant-cells.

In two cases of myelocytic leukemia the counts were high, varying from 595,000 to 860,000, while in one case the count was normal. In this connection it is of interest to note that while the leukocyte count in one case fell from 385,000 to 161,000 under x-ray treatment, the blood-platelet count, which had been 860,000, remained high, 771,000. This observation constitutes additional evidence that the blood-platelets are not closely related to the leukocytes, or to their parent cells of the bone marrow, the myelocytes.

Forty-four counts in all were made in seventeen cases of typhoid fever. The results show that in the beginning of the disease the number of the blood-platelets is below normal or a low normal, but as the disease progresses their number increases and during convalescence may be very high, in one case reaching 759,000. In two cases of relapse the platelet count became low after having been normal or high, becoming again normal or high in convalescence.

In lobar pneumonia during the progress of the disease the number of the platelets may be low, normal, or slightly above normal, but at or soon after the crisis it increases very rapidly and in one case reached 944,000. In a case in which empyema developed the counts rose to 714,000 and 813,000 during this complication, while during the pneumonia they were 229,000 on two occasions.

In two cases of malaria there were low counts. In one of them the count was 143,000, but six days after quinin treatment had begun it had risen to 449,000.

In a case of hemophilia with persistent epistaxis and purpura, the count was 125,000 on July 2 and 337,000 on August 17, but fell to 27,000 three days later. Another count made after the lapse of some months was 87,000. In another case of hemophilia, however, the count was high, being 698,000, and 708,000 three days later. A case of Henoch's purpura also showed high counts (508,000 to 645,000 in five counts during sixteen days).

In a child with chronic bloody diarrhea due to ulcerative colitis, five counts made in the course of three weeks varied from 18,000 to 62,000.

The platelet counts of a man who had been drunk for about two months and had eaten but little, was of special interest. He entered the hospital with delirium tremens, bleeding from the gums and symptoms suggestive of scurvy. He also had cirrhosis of the liver. Two days after entrance the count was 136,000. Under feeding and the administration of orange juice he rapidly grew better and the counts taken at intervals of one or two days were successively, 141,000, 160,000, 187,000, 270,000, 365,000 and 350,000.

Counts made in other diseases were as follows: infectious polyarthritis, two cases, 518,000 and 641,000; pleurisy with effusion, two cases, 628,000 and 335,000; streptococcus septicemia, 456,000; chorea, 445,000; "Hodgkin's disease," 458,000; gangrene of the gall-bladder, 221,000.

The relation of the number of the blood-platelets to the number of the leukocytes in the same blood has also been studied. By using a counting-chamber with a Türck ruling, we have been able to make leukocyte counts parallel with the platelet counts in the same chamber, the counting being facilitated by the staining of the leukocytes. In this way 164 leukocyte counts of widely varying figures were obtained and compared with the platelet counts in the same cases. The results clearly show that variations in the number of the platelets and in the number of the leukocytes have no constant relation to each other. This is a further evidence that the blood-platelets are not derived from the leukocytes, as some writers have believed.

For Honest Advertising.—"The action of the federal authorities in excluding offending newspapers from the mails protects only a part of the readers of fraudulent advertisements. There should be state legislation holding publishers accountable for printing the palpably dishonest advertisement swindles, and of all other unscrupulous advertisers who seek to betray the reader's confidence in the integrity of the press." Above is the concluding paragraph of Governor Osborne's inaugural message to the legislature. It is given prominence here for the reason that no Detroit daily newspaper has printed it, with the exception of the *Times*, and we believe it merits the widest possible publicity. Dishonest advertising is eliciting increasingly courageous criticism from the more reputable journals throughout the country.—Detroit *Saturday Night.*

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[2] Wright, J. H.: The Histogenesis of the Blood-Platelets, Jour. Morphol., July, 1910, xxi, No. 2; Publications Massachusetts Gen. Hosp., iii, No. 1.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

COLLOIDAL SILVER PREPARATIONS[1]

Under certain conditions involving a very fine state of subdivision, metallic silver and some of its compounds ordinarily insoluble appear to become soluble in water. These preparations are not precipitated by the ordinary precipitants of silver salts. Consequently they can be mixed with organic liquids or injected into the tissues or even into the bloodstream without precipitation and without causing marked symptoms or irritation. They possess to a greater or less degree the antiseptic properties of solutions of silver.

CARGENTOS.—Argenti Oxidum Colloidale, Mulford.—Colloidal Silver Oxide, Mulford.—Cargentos is claimed to be a preparation of colloidal silver containing 50 per cent. of metallic silver in the form of oxide, together with a sufficient amount of modified casein to maintain the silver oxide in colloidal form when in solution.

Cargentos is prepared by precipitating an alkaline solution of silver caseinate and silver oxide by an acid, dissolving the precipitate in an alkali, dialyzing the resulting solution against running water and evaporating the remaining colloidal solution to dryness in vacuo.

Cargentos occurs in odorless and tasteless black scales of metallic luster. It is freely soluble in water and glycerin. Solutions of cargentos are reddish brown by transmitted light and greenish black by reflected light. Solutions of cargentos should be prepared with cold water and kept in dark colored bottles.

Its solutions are not precipitated by sodium chloride nor by albumin in the secretions.

Cargentos, when assayed by the following method, should be found to contain silver equivalent to 48 to 52 per cent.

0.3 to 0.5 Gm. cargentos is weighed into a crucible, ignited gently at first, afterwards with full flame of a bunsen burner, until the ash is light in color.

The residue is treated with concentrated nitric acid and if completely dissolved the solution is diluted with 50 Cc. water, 2 Cc. ferric ammonium sulphate solution added and directly titrated with tenth normal potassium sulphocyanate. If after treating with nitric acid an insoluble residue of silver chloride remains, it is collected on a filter, washed with water, dried, ignited and weighed as silver chloride; the silver content of the filtrate is determined by titration with tenth normal sulphocyanate as before and the silver so found is added to that obtained in the silver chloride.

Actions and Uses.—Cargentos is claimed to possess considerable germicidal power and pronounced penetrating properties. It is said to be non-irritating even in 50 per cent. solution.

It is said to be useful as a substitute for the ordinary compounds of silver in treatment of inflamed mucous membranes and as an intestinal antiseptic. It may be used in 50 per cent. solutions for the purpose of producing a shadow in Roentgenographic examinations.

Dosage.—For application in diseases of the eye and of the genitourinary organs 5 to 25 per cent. solutions; for application to other mucous membranes 10 to 50 per cent. solutions may be used. Freshly made solutions are always to be preferred.

Manufactured by H. K. Mulford Company, Philadelphia. Process patent applied for. Not trademarked.

Cargentos Tablets.—Colloidal Silver Oxide, 3 grains, Mulford.—Each tablet contains cargentos 0.195 Gm. (3 grains) without excipient.

To prepare a solution the tablet should be crushed and powdered, sprinkled on the required quantity of cold water and allowed to stand for about 5 minutes and then agitated until solution occurs.

Cargentos Rectal Suppositories.—Colloidal Silver Oxide Rectal Suppositories, Mulford.—Each suppository weighs 1.25 Gm. (19¼ grains) and contains cargentos 0.130 Gm. (2 grains) in a vehicle consisting of oil of theobroma together with a sufficient quantity of yellow wax.

Cargentos Vaginal Suppositories.—Colloidal Silver Oxide Vaginal Suppositories, Mulford.—Each suppository weighs about 6.4 Gm. (98½ grains) and contains cargentos 0.325 Gm. (5 grains). The vehicle consists of oil of theobroma together with a sufficient quantity of yellow wax.

Cargentos Urethral Suppositories.—Colloidal Silver Oxide Urethral Suppositories or Bougies, Mulford.—Each suppository weighs about 2.5 Gm. (37 grains) and contains cargentos 0.130 Gm. (2 grains). The vehicle consists of glycerite of boroglycerin, gelatin and water.

OVOGAL—Albumen Cholicum.—Ovogal is a combination of bile acids with egg albumen.

Ovogal is a greenish-yellow powder, insoluble in water, dilute acids, ether, benzol, fats, etc. Alcohol and acetone do not dissolve it, but after long action remove from it small amounts of the bile acids. Alkalies dissolve ovogal, splitting it into albumen and bile acids (glycocholic and taurocholic acid).

If 0.5 Gm. of ovogal is boiled with 1 to 2 Cc. hydrochloric acid until a clear green solution is produced and then diluted with from 30 to 40 Cc. of absolute alcohol an abundant cloudy precipitate separates, which when washed with alcohol until the washings are colorless, gives the characteristic reactions for proteins. On evaporation of the alcoholic filtrate, the bile acids may be recovered and identified. Ovogal on ignition should leave no weighable residue.

Actions and Uses.—Ovogal is said to pass the stomach without marked decomposition and to be dissolved and absorbed in the intestine.

For therapeutic indications see Bile Salts.

Dosage.—0.5 to 1 gm. (8 to 15 grains) several times daily in capsules with water, tea, coffee or fruit juices.

Manufactured by J. D. Riedel A. G., Chemische Fabriken, Berlin, Germany. (Riedel & Co., New York.) Not patented in U. S. German patent No. 176,945. U. S. trademark No. 78,352.

Ovogal Capsules.—Each capsule is said to contain ovogal 0.5 Gm. (7½ grains).

XERASE.—Xerase is a mixture of a specially prepared dry beer yeast 150 parts, grape sugar (dextrose) 20 parts, white bole 125 parts and a mixture of nutritive salts 3 parts.

Xerase is a yellowish-gray powder, having a weak odor of yeast and a salty taste. It is only slightly soluble in water. It resists ordinary atmospheric conditions.

Actions and Uses.—This mixture is absorbent on account of the bole and readily induces fermentation which is favored by the sugar and salts and it is claimed that the yeast has a bactericidal action on such organisms as the gonococcus. It is said to adhere readily to mucous membranes.

It is claimed that this mixture is useful in inflammations and ulcerations of the vaginal and cervical mucous membranes and in the treatment of putrid wounds, ulcers, inoperable carcinoma, etc. It may be applied as a powder by insufflation or inserted into the vagina in a gelatin capsule.

Manufactured by J. D. Riedel Aktiengesellschaft, Berlin, Germany (Riedel & Co., New York). Not patented in the United States. U. S. trademark applied for.

Xerase Capsules.—Each capsule contains about 3 Gm. (45 grains) of Xerase.

Therapeutics

TYPHOID FEVER

VACCINATION AGAINST TYPHOID FEVER

The demonstration of the important relation which bacilli bear to typhoid fever led shortly to the query as to whether by cultivation of the bacilli any product could be obtained which might be successfully used in the treatment of the disease or in its prevention.

The studies of Haffkine, in India, with reference to obtaining a substance which could be used for prophylactic inoculation in the prevention of cholera, led to similar investigations in regard to typhoid fever. These were taken up by Pfeiffer, in Germany, and in London by Sir Almroth E. Wright; and to Wright especially do we owe the development of the present system of antityphoid inoculation.

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[1] In accepting Cargentos, the Council has voted that a general article on Colloidal Silver Preparations be inserted in N. N. R. and Cargentos and Collargol be placed under it.—W. A. PUCKNER, Secretary

The vaccine used for preventive inoculations is prepared by cultivating a strain of not very virulent typhoid bacilli. These are destroyed by heat and have added to them a small amount of an antiseptic to prevent contamination with aerobic microorganisms. It is customary to standardize the solution so that 1 c.c. will contain 1,000,000 of the bacilli. This is the usual dose administered, although sometimes half the quantity is used. The vaccine retains its strength for at least three months, and it has been found in some cases to retain its efficiency for fifteen months. It is used by hypodermatic, not intramuscular, injection and is usually given in the arm, but it may be given under the skin of the abdomen. It is usually advisable to repeat the dose after ten or twelve days in order to get the maximum amount of protection from the inoculation. Following the first dose there is a varying amount of reaction. This may be indicated locally by redness of the skin, which may vary from a patch three or four inches in diameter to one that extends down the forearm and to the shoulder. The axillary glands may be enlarged.

Accompanying this local reaction there may be a constitutional reaction which may vary from slight indisposition in mild cases to chills, with an elevation of temperature to from 101 to 103 F., with aching throughout the body, accompanied sometimes by a headache—symptoms such as accompany the onset of a severe cold or influenza. Rarely is there nausea or diarrhea.

After the subsidence of the local manifestations there may remain a slight nodule, which, however, disappears in about two weeks, *leaving no mark to show where the* vaccination has been done.

The constitutional symptoms appear in two or three hours in mild reactions, and disappear in from twelve to twenty-four hours; in severe reactions the symptoms last for from forty-eight to seventy-two hours. In children, the constitutional symptoms are usually less marked than in adults.

A great deal has been said about the so-called negative phase. This has reference to an increased susceptibility to typhoid fever during the first two or three weeks after the inoculation has been made. The alleged presence of this so-called negative phase has been used as an argument against the general adoption of the inoculations, but Wright has demonstrated conclusively that this may be prevented by avoiding a large dose, and the dose of one billion bacilli is not so large as to cause this temporary increased susceptibility to the infection.

The injections are best given in the late afternoon, so that the patient may retire early in the evening, and the greater part of the unpleasant symptoms from the reaction, in a mild case, may disappear during the following morning.

A considerable number of statistics have been reported by various observers, and especially through Wright, of England, concerning the results of these inoculations in various parts of the world, and especially in the British and United States armies. Comparing, in the same regiment or groups of regiments, the men who have been inoculated with those who have not been inoculated, it has been observed uniformly that fewer cases of typhoid fever have occurred among the inoculated men than among those who have not been inoculated. Still more striking is the observation on the mortality of typhoid fever. The mortality of the small proportion of inoculated men who suffer from typhoid fever is very much less than the mortality among the uninoculated men.

These various statistics would seem to prove conclusively the usefulness of inoculation in diminishing the number of cases of typhoid fever, and still more in diminishing the mortality among those affected with the disease.

What is the significance of the facts thus set forth to the general practitioner? Is it his duty to advise all who consult him to subject themselves to antityphoid vaccination? Does he not show himself guilty of negligence which is deserving of severe criticism, if he does not do so? Certainly, to-day neither the members of the medical profession nor the citizens of the country have been educated up to the point where the conscientious physician can reasonably be expected to advise his patients to submit to antityphoid inoculation, however thoroughly he may be convinced of its usefulness. With regard to certain classes in the community there can be no question of the advisability of these inoculations. It is recognized by all that the disease occurs with the greatest frequency among youths and young adults. Consequently, it is with reference to these that the problem is most urgent.

One class of young adults with regard to whom the sentiment is pretty well formed that vaccination should be done, consists of soldiers who are about to engage in war. As is well known, typhoid fever is especially prevalent in armies during military campaigns; consequently, all soldiers who are about to enter on a campaign should receive inoculations, and at present a large number of them are getting it.

Perhaps the next class in the community which is especially exposed to the danger of contracting typhoid fever includes the permanent attendants on sick people in general hospitals, viz., the nurses, the orderlies, and the resident medical staff. It may be fairly said that at present those in authority are liable to be censured if they do not insist on these individuals receiving typhoid inoculations, unless it may be those in hospitals where typhoid fever is never treated. How many such hospitals are there?

Perhaps the next classes to be considered are young men and women who leave home to go to college or boarding school, people who make long trips away from home, and people who take summer recreation trips. As is well known, typhoid fever is common among the people of these classes, and it would no doubt be wise if all such persons should submit to antityphoid vaccinations before leaving their homes. Were this done, unquestionably many cases of the disease would be prevented, and many deaths avoided.

Finally, taking up the rest of the community, there seems to be no reason to doubt that, except in those parts of the country where typhoid fever is unknown and where the people never leave their homes, it would conduce to the avoidance of the disease and the prevention of death from it, if everyone submitted to an inoculation.

The period during which the protection against the disease persists is not definitely established. It seems to be pretty well proved that the protection is effective for at least two years, and there is very strong reason for believing that a considerable degree of protection, though not so complete protection, is afforded for many years, or even during the rest of the individual's life.

When sanitation has entirely stamped out the disease, these inoculations of course will be superfluous; until that time arrives there is every reason to believe that they will be advised with increasing frequency by conscientious physicians and will be increasingly demanded by people who intend to avoid sickness and death from typhoid fever.

THE SPECIFIC TREATMENT OR SEROTHERAPY OF TYPHOID FEVER

Thirty or forty years ago, at the time when Ziemssen's monumental cyclopedia of medicine became known to American readers, the term "specific treatment" as applied to typhoid fever was used to indicate the administration of large doses of calomel during the early part of the disease. Since the discovery of the *Bacillus typhosus* and the active work of bacteriologists on typhoid fever, the term has been applied to those forms of treatment in which it was attempted to make use of a serum in the treatment of the disease.

No treatment of this character at all comparable to the serum used in the treatment of diphtheria has, up to the present, been found for typhoid fever, although great effort has been expended in trying to discover such a serum.

The one concerning which the most favorable reports have been made and which seems to have accomplished the most is that used by Chantemesse, of Paris. He began the administration of his antityphoid fever treatment in 1892, but his results were not successful until, in 1899, he produced a soluble typhoid toxin. From this he was able to produce his antityphoid serum. The serum which he employs is obtained from horses immunized by injections of the soluble typhoid toxin. This serum he uses in doses of from 10 to 12 c.c. at first, and if the temperature does not fall within a week, 4 or 5 c.c. more are injected. In connection with the serum he employs cold baths. In his reports he states that the average mortality in the other hospitals of Paris is 18 per cent., while in those under his charge among the patients treated by his serums and baths, the mortality is reduced to 4 per cent.

The manufacture of this serum is so difficult and the expense of obtaining it is so great, that it has not been extensively used in this country, and consequently American physicians are not prepared to express an opinion in regard to its use, or to administer it to patients.

Chantemesse maintains that the best results are obtained when the remedy is administered early, during the first week of the disease.

He reports that after the injection of his serum there is at first a period of reaction, when the temperature in some cases is elevated. This may last for from a few hours to several days. Subsequently, the temperature falls gradually, and the pulse is slowed, the blood-pressure raised, the quantity of urine increased, and the patient feels decidedly more comfortable. The temperature continues to fall for ten or twelve days, and the patient soon goes on to rapid convalescence. Should the patient seem to remain at a standstill, a second injection may be required.

GENERAL MANAGEMENT AND DIET

This subject was discussed in The Journal, Oct. 10, 1908, page 1233; Sept. 4, 1909, page 800; Oct. 15, 1910, page 1381.

THE PROTECTIVE TREATMENT OF THE HEART AND BLOOD-VESSELS DURING AND AFTER AN ATTACK

Everyone is familiar with the striking impression which typhoid infection makes on the heart during the course of the disease, and of the degenerative changes in the cardiac muscle which are found on post-mortem examination of that organ. It is not strange, in the case of a disease which lasts so long and which produces these degenerate changes in the heart, that during and following convalescence the heart should often be found to be profoundly affected.

The cardiac and vascular changes which are found after typhoid fever during the months and years following convalescence are of several kinds. It is well known that during the course of the disease pericarditis is a rare complication. Frequent cardiac murmurs are discovered during the later weeks of the disease. In many cases these disappear during convalescence, but if patients are examined from five to ten years after having experienced an attack of typhoid fever, it will be found that in the majority of these individuals the blood-pressure is considerably higher than in individuals of the same age who have not had typhoid fever. It will also be found that the radial arteries are palpable in a far larger proportion of persons who have had typhoid fever than in those who have not. Further, the average size of the heart is greater among those who have had typhoid fever than in those who have not. Finally, it will be found that a larger proportion of persons who have had typhoid fever will have organic disease of the heart than of those who have not suffered from an infectious disease.

It is maintained by many observers of wide experience that, with the exception of rheumatism, no infectious disease is more likely to produce permanent damage to the heart than typhoid fever.

Bearing these facts in mind, it is the obvious duty of the physician who takes care of a patient with typhoid fever, to guard against these different forms of damage to the cardiac and vascular system. It is the realization of these different forms of cardiovascular damage which gives added importance to the enforcement of rest during convalescence. This rest is recognized as being important for the patient not only in preventing a relapse, but it should also be recognized as being important in preventing the development of any of these circulatory troubles. The rest should be enforced for considerably longer than has commonly been done. This does not mean that the patient should be kept in bed for an indefinite number of weeks after convalescence has been established, but it means that he should be limited in the amount of exercise which he takes, and that he should not be allowed to undertake severe physical or mental work until several weeks have elapsed after the establishment of convalescence, and until careful examination fails to show any disturbance of the circulatory organs. Such disturbance may be indicated by a rapid pulse and weak action of the heart, and by various disturbances of the peripheral circulation such as coldness of the feet or sweating at night.

As undoubtedly the food taken by an individual affects the nutrition of the heart and its action, the diet recommended should be such as will not tend to produce arteriosclerosis or increase vascular tension. The amount of protein undoubtedly should be limited, although a moderate amount of protein is essential for the restoration of the degenerated tissues. Milk and fruit should for a long time constitute an important part of the diet.

The patient should be kept in bed until the pulse regains its normal rapidity, and the amount of exercise that he is allowed to take should not be such as will increase the action of the heart beyond the normal rate. It is also important that the nervous system should not be subjected to unusual irritation, and he should avoid cares and worries as far as possible. Protracted rest and a simple diet are the essential features of this protective treatment.

NERVOUS, MENTAL AND SPINAL CONDITIONS

Perhaps one of the most striking results of the progress which has been made during the last few decades in the treatment of typhoid, is the diminution of the frequency and severity of the nervous phenomena observed during the course of the disease. The so-called typhoid condition characterized by a dry and brown coated tongue, lips and teeth covered with sordes, dull and apathetic mind, or delirium, sometimes violent and sometimes busy, with muttering, muscular tremors, and subsultus tendinum, are comparatively rarely seen at the present day. Now other nervous phenomena are demanding attention, and among these may be mentioned changes in the mental condition both before and after the attack of the fever. Cases have been reported, chiefly in patients who had a defective mental inheritance or who themselves were not up to the average of mental development, in which the attack of typhoid fever has been preceded by maniacal delirium, which subsided with the onset of the fever. More frequently, but yet only occasionally, during convalescence various disturbances of the mind have been observed which are classed together as the psychoses of typhoid fever. In the initial delirium, motor excitement appears to be a constant feature, so that when an unexplainable attack of mania, accompanied by this motor excitement, occurs, it is well, if the patient is found to have any fever, to test his blood by the Widal method.

During convalescence, the common forms are the so-called collapse delirium, in which the patient imagines that he has been taken from his previous surroundings, that he is somewhere other than in the place where he really is, or there may be various forms of mania or melancholia. In addition to these, various forms of neurasthenic phenomena are frequently observed.

With a view to avoiding and preventing these postfebrile phenomena, the nervous system should be carefully watched during the course of the disease and such measures adopted as will quiet nervous restlessness and prevent loss of sleep. The most important of these methods is cold or tepid sponging, or other cold applications. When for any reason these are impracticable or ineffective, they may be supplemented by hypnotic drugs, such as the bromid of sodium, chloral, sulphonethylmethane (trional), or morphin. The last in small dose is often the best.

As soon as convalescence is fairly established, the nutrition should be rapidly improved by the addition of such food as the patient can digest and assimilate. The patient should maintain a condition of rest so long as there is any evidence of irritability or nervous instability. He should not be disturbed by visitors or by having business cares and worries brought to his attention.

The prognosis of these conditions and even of a mild insanity is, as a rule, favorable, and treatment at home may be continued for a greater length of time than in cases of ordinary insanity.

In connection with these nervous and mental disorders may be mentioned the condition described by Gibney as typhoid spine, which consists of an inflammation of the structures in and around the joint called by him perispondylitis. This condition is characterized by a great deal of pain in the spine, usually in the lumbar region, accompanied by swelling and tenderness of the boney structure of the affected region. It should be distinguished from a painful condition of the muscles on each side of the spine resulting from strain from the patient lying with his back not properly supported (often too soft bed-springs), also from the hypersensitive spine seen in neurasthenic patients and other functional troubles. The pain is sharp and shooting, relieved by lying flat on the back, but aggravated by any movement of the spine. The treatment consists of rest in bed, with counterirritation and massage. The patients as a rule recover.

THE HAIR IN TYPHOID FEVER

Typhoid fever in all the aspects of its symptomatology, pathology and treatment has been so voluminously discussed by so many teachers and writers that it is surprising to find in the literature relating to this disease so little definite information in regard to the occurrence of loss of hair and its prevention. In works treating of dermatology this matter is incidentally mentioned under the head of *alopecia prematura* or *presenilis*. To the condition here to be discussed the term *defluvium capillorum* is also applied.

Naturally, during the height of the fever when the physician is exercised in attempting to prevent the death of the patient, to relieve the fever, to maintain the circulation, and to keep up the general nutrition, it is not strange that a matter of so little life and death importance as the hair should be neglected; but after the fever has left the patient, after convalescence has become established, and when the patient walks around and receives the visits of friends, one of the most annoying symptoms in a large number of cases is the impending and active loss of the hair. This causes great annoyance, especially to female patients, and its causation and prevention are worthy of careful study by the physician.

The condition is undoubtedly associated with the defective nutrition of the entire body, and one of the most important measures for combating it is by improving the general nutrition. Of course, food stands in the first place in this regard, but it may be supplemented by medicinal treatment, and especially by the addition of moderate sized doses of arsenic, which is generally recognized as having a direct action on the nutrition of the skin, perhaps four or five drops of Fowler's solution, well diluted, three times a day, after eating. Calcium glycerophosphate is also of value.

Locally, the nutrition of the skin may be improved by massage with the application of a moderate amount of some oily substance, of which the best perhaps is the official adeps lanæ hydrosus. In addition, such remedies as stimulate the scalp are of considerable importance. Among the different preparations recommended for stimulation of the scalp are various solutions containing tincture of cantharides, various cinchona or quinin preparations, sulphur either suspended in solution or in various strength of ointments, oil of turpentine combined with bland oils, or with alcohol; and solutions containing ammonia or chloroform.

When the hair commences to fall out after an attack of typhoid fever, the question of cutting the hair or shaving the scalp is frequently raised. It is, of course, of great importance, especially if the patient is a woman, to retain the hair if possible. Certainly, no physician should advise cutting off the hair when it is luxuriant, and before advising it the local applications already enumerated should be tried. In severe cases, in which these measures are not successful, it unquestionably is beneficial to cut the hair. In the majority of cases this will stop the falling of the hair, and ultimately, new hair will grow, and the new growth will be of equal thickness with the original. Occasionally, perhaps, it may be slightly coarser.

THE LOS ANGELES SESSION

THE SIXTY-SECOND ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION TO BE HELD AT LOS ANGELES, JUNE 27-30, 1911

OFFICIAL CALL

TO THE OFFICERS AND MEMBERS OF THE CONSTITUENT ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-second annual session of the American Medical Association will be held on Tuesday, Wednesday, Thursday and Friday, June 27, 28, 29 and 30, 1911, at Los Angeles, Cal

The House of Delegates will convene at 10 a. m., Monday, June 26, 1911.

REPRESENTATION

In accordance with the reapportionment of delegates made at the Atlantic City Session of 1909, state associations are entitled to delegates for 1911-12 as follows:

Alabama	3	Louisiana	2	Oklahoma	2
Arizona	1	Maine	1	Oregon	1
Arkansas	2	Maryland	2	Pennsylvania	9
California	3	Massachusetts	6	Philippine Is.	1
Colorado	2	Michigan	3	Rhode Island	1
Connecticut	2	Minnesota	2	South Carolina	2
Delaware	1	Mississippi	2	South Dakota	1
Dist. Columbia	1	Missouri	5	Tennessee	3
Florida	1	Montana	1	Texas	5
Georgia	2	Nebraska	2	Utah	1
Hawaii	1	Nevada	1	Vermont	1
Idaho	1	New Hampshire	1	Virginia	3
Illinois	9	New Jersey	3	Washington	2
Indiana	4	New Mexico	1	W. Virginia	2
Iowa	3	New York	11	Wisconsin	3
Canal Zone	1	North Carolina	2	Wyoming	1
Kansas	2	North Dakota	1		
Kentucky	4	Ohio	7		

The twelve sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health and Marine-Hospital Service are entitled to one delegate each.

EXTRACTS FROM BY-LAWS

The following quotations from the By-Laws of the American Medical Association are given in this connection, for their bearing on the qualifications of delegates, their election and their time of service.

> "No one shall serve as a member of the House of Delegates who has not been a member of the American Medical Association for at least two years."
>
> "Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one-half, as near as may be, shall be elected each year. Delegates and alternates elected by the sections, or delegates appointed from the United States Army, United States Navy and United States Public Health and Marine-Hospital Service, shall hold office for one year."—Chap. III, Secs. 1 and 2, By-Laws.

GENERAL MEETING

The General Meeting which constitutes the opening exercises of the scientific functions of the Association will be held at 10:30 a. m., Tuesday, June 27, 1911.

REGISTRATION DEPARTMENT

The Registration Department will be open from 8:30 a. m. until 5:30 p. m. on Monday, Tuesday, Wednesday and Thursday, June 26, 27, 28 and 29, and from 9 to 10 a. m. on Friday, June 30, 1911.

William H. Welch, Baltimore, President.
George H. Simmons, Chicago, Secretary.

LOS ANGELES

MEETING PLACE OF THE SIXTY-SECOND ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Only three times in the past has the American Medical Association held its meeting on the Pacific slope, the past meeting places having been San Francisco in 1871, Portland in 1905 and San Francisco in 1894. This will be the first time that a session has been held in Los Angeles.

For the better information of those who anticipate being present at the Sixty-Second Session of the Association, a description * of the city and its attractions, the surrounding points, coast resorts, etc., will be of interest.

Los Angeles, the City of the Angels

There are few cities in the United States that have had such a remarkable and varied career as Los Angeles, the chief city of southern California, and the commercial metropolis of the southwest section of the United States. Few cities of this size, moreover, are so well known throughout the length and breadth of this country, as well as abroad. The rapid growth of Los Angeles, from an insignificant semi-Mexican town to a metropolitan city, has been told and retold, until it is familiar in a general way to millions of Americans, while the attractions offered by the city to health-seekers, pleasure-seekers and tourists have been spread abroad by hundreds of thousands of visitors who, after one trip to this section, are usually anxious to return, frequently becoming permanent residents.

Population

During the past thirty years Los Angeles has grown from population of 11,000 in 1880, to 319,198 by the census of 1910. There are three leading features that have contributed to such growth. These are climate, soil and location. Any one of these advantages would be sufficient to build up a large city, but taken together they insure the future of Los Angeles as the metropolis of the southwest.

Name and Origin

The original name of the pueblo or town of Los Angeles, following the custom that then prevailed among the Latin races of giving religious names to places, was Nuestra Senora de Los Angeles, sometimes written Nuestra Senora la Reina de Los Angeles—Our Lady, the Queen of the Angels. This has been shortened by the practical Yankees to Los Angeles. Los Angeles was founded on Sept. 4, 1781, by a small band of forty pablodores or colonists, who had been recruited in the Mexican states of Sinaloa and Sonora, and brought here under command of a government officer, to found an agricultural colony, for the purpose of raising produce for the soldiers at the presidios. The first census of the little city, taken in August, 1790, gave the total population as 141. They were a mixed class, composed of one European, seventy-two Spanish-Americans, seven Indians, twenty-two mulattoes and thirty-nine Mestizos. As recently as 1831, fifty years after the founding of the pueblo, the population was only 770. In January, 1847, the population was 1,500. It began to grow rapidly about 1880, and has continued until it has reached the figures quoted above.

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* Information for this article was furnished by George H. Kress, M.D., secretary-general of the Los Angeles Committee of Arrangements.

Streets

Considering that twenty years ago it had not a single paved street, Los Angeles has made remarkable progress in street improvements. There are now over 450 miles of graded and graveled streets, 63 miles of paved streets and 320 miles of sewer. Los Angeles has a complete sewer system, including an outfall sewer to the ocean.

Lighting

At night Los Angeles presents a brilliant appearance. It was the first city in the United States entirely to abandon gas for street lighting, and to replace it by electricity, which was done twenty-five years ago, and it is now one of the best lighted cities in the Union. Many of the lamps are on high masts. Seen from one of the surrounding hills, the view of the city at night is most beautiful and striking. Broadway and Spring streets are now lighted their entire length by clusters of electric lights on handsome iron electroliers, 100 feet apart, paid for by the property owners, the city supplying the "juice." A similar lighting scheme has been installed on Main Street to Tenth, a distance of ten blocks, and also on Hill Street to Pico, a distance of thirteen blocks.

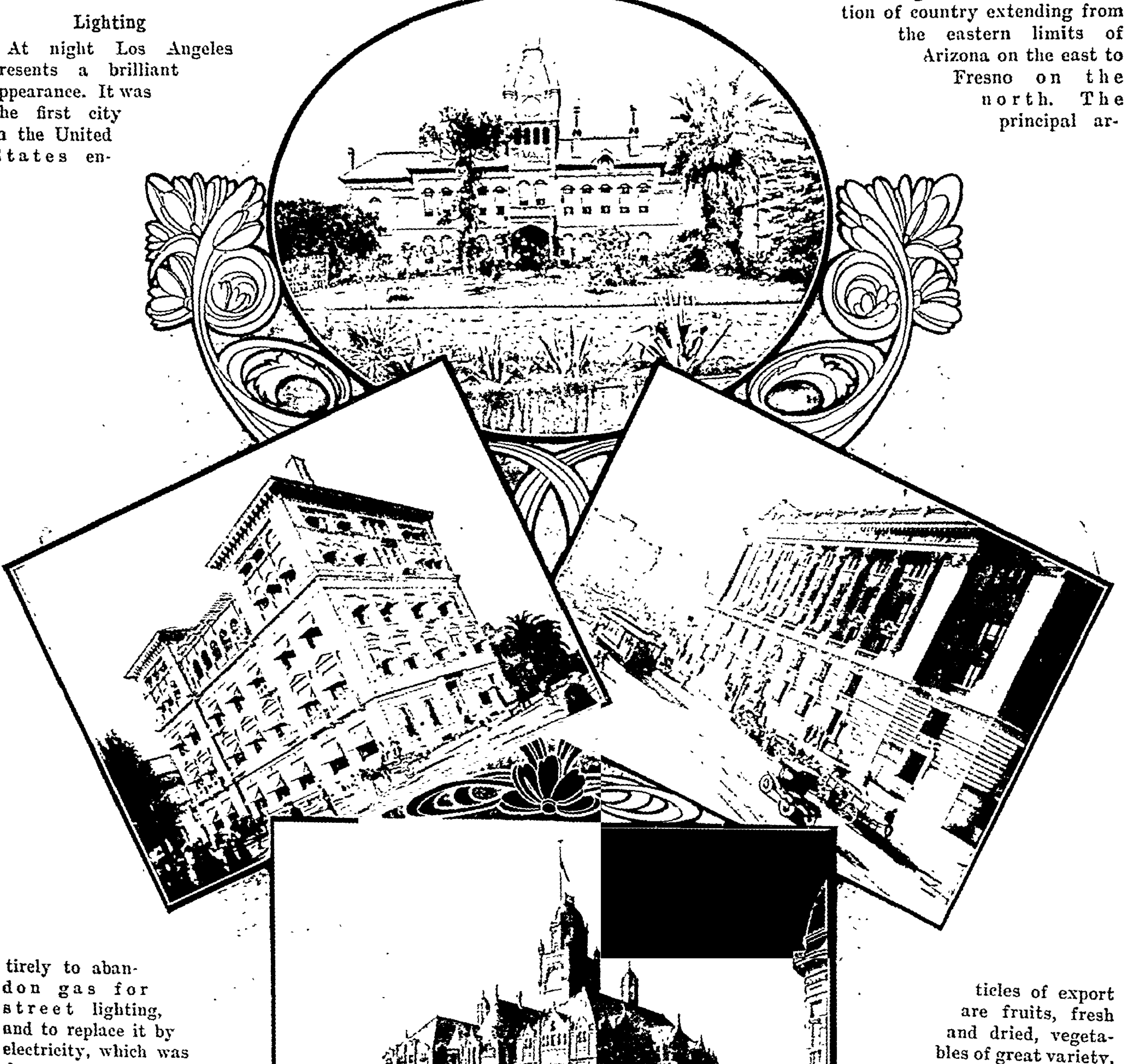


Fig. 1.—Public buildings in Los Angeles: State Normal School at the top, the Postoffice at the right, the California Club at the left, and the Court House at the bottom.

Business

That Los Angeles is and will always remain the commercial metropolis of southern California admits of no doubt. The city possesses the great natural advantage of being located on the shortest route, by the easiest grades, between the Pacific and the Atlantic oceans. The merchants of Los Angeles do a large business with a section of country extending from the eastern limits of Arizona on the east to Fresno on the north. The principal articles of export are fruits, fresh and dried, vegetables of great variety, beans, wine and brandy, wool, honey, canned goods, sugar, olives, corn, wheat, barley, petroleum and by-products.

The assessed valuation of property in the city this year, including personal property, is $265,570,272.

Banks

The banks of Los Angeles are noted throughout the country for their solid and prosperous condition, with deposits aggregating $102,000,000. The clearings of the Los Angeles city banks for the year 1908 amounted to $505,588,756. Los Angeles has been leading all cities in the United States in increase of bank clearings.

Railroads

Los Angeles possesses the advantage of four transcontinental lines. These are the "Sunset Route" of the Southern Pacific, by way of El Paso and New Orleans, the Ogden route of the same company, connecting with the Central and Union Pacific, the Sante Fe route, by way of Albuquerque, and the San Pedro, Los Angeles and Salt Lake Railroad, the operation of which began May 1, 1905, opening up a comparatively unknown section in southern Utah and Nevada, which is wonderfully rich in precious and useful minerals. The Southern Pacific has two lines between Los Angeles and San Francisco—one through the San Joaquin Valley and the other along the coast. The Santa Fe also connects with San Francisco via Barstow, in San Bernardino County. Altogether, there are over a dozen lines of railway centering in Los Angeles. The Pacific Coast Steamship Company runs vessels regularly from Los Angeles County ports to San Francisco on the north and San Diego on the south.

Harbor

Reference is made elsewhere to the work of the national government on a deep-water harbor at San Pedro. This work, when completed, will give a great impetus to foreign commerce, and Los Angeles should before long become an important point for Oriental trade.

When the Isthmian canal is constructed the coast of Los Angeles County will be on the direct course of steamships sailing from the Atlantic coast and from European to Asiatic ports. It will also furnish a greatly enlarged market for the horticultural products of this section.

Street Railways

The street railway system of Los Angeles is excellent. There is probably no city of the size in the United States that has a more modern or a better equipped system. The total mileage of single track is over 300 miles, all electric. There are suburban electric lines to the ocean beach towns, Santa Monica, by two different routes; to Redondo, also by two routes; to Port Los Angeles, Long Beach, Newport, Huntington Beach, Naples and San Pedro, and to inland towns, Pasadena and Altadena, Alhambra, San Gabriel and Monrovia, Whittier, Azusa, Glendora, Sierra Madre, Covina, La Habra, Glendale and Santa Ana in the fruit country. The suburban electric railroads radiating from Los Angeles aggregate 767 miles of single track. They are almost all double track. Some have four tracks.

Building

For a dozen years past Los Angeles has been the scene of great activity in building operations. Scores of fine business blocks and hundreds of handsome residences have been built. The value of the building permits issued in Los Angeles during the year 1908 amounted to $10,000,000. The actual value of the buildings was much larger.

Parks

There are a dozen public parks within the city limits, aggregating over 600 acres, of which six are of considerable size. Westlake Park, 35 acres in area, on the Seventh Street car line, is one of the most popular open-air resorts, and is in the heart of a splendid residence section. It has a lake with boats, fine drives and extensive views from the adjacent hills. Eastlake Park, in East Los Angeles, covers 50 acres, and has been made attractive. Here also is a lake and the park nurseries and a menagerie. Prospect Park on Boyle Heights is a small but beautiful place, with many choice trees and shrubs. The oldest and best improved of the city parks, on Sixth Street, not far from the business center, is known as Central Park. The trees have attained a large growth. Hollenbeck Park is a tract of about 20 acres, on the east side of the river, on Boyle Heights. It has been improved with shade trees and a small lake. Echo Park, a beautifully improved tract in the northwestern part of the city, contains the largest body of water in Los Angeles.

Elysian Park, 500 acres in area, is a remnant of the thousands of acres of such land which the city formerly owned. It may safely be said that this tract offers the greatest possibilities for diversity of growths of any piece of ground within the limits of an American municipality. Much of the land is within the frostless belt. The views of mountains, valley and ocean, city and plain are grand in the extreme.

What has been said in regard to Elysian Park is true of Griffith Park, a tract of 3,000 acres, donated to the city. It is located about a mile north of the city limits, and embraces a varied assortment of mountain, foothill and valley scenery. A boulevard to connect the parks of Los Angeles has been commenced. The large tract of land in the southwest part of city, known as Exposition Park, was recently made part of Los Angeles. Plans have been prepared to make this a handsome and attractive park. A museum, an armory and a mammoth exposition hall are being erected.

Los Angeles has now seven regular public playgrounds and four vacation or summer centers. The cost of maintaining the playgrounds during the past year was $42,000. The public library maintains a branch at three of the regular playgrounds. During the winter months a series of free lectures and entertainments is given.

Homes

After all is said, the chief attraction of Los Angeles to new arrivals lies in its beautiful homes. The rare beauty of the grounds surrounding the attractive homes of Los Angeles, Pasadena and other Los Angeles County cities is a constant theme of admiration on the part of eastern visitors. Other cities may show greater business blocks, but when it comes to gardens, Los Angeles is *facile princeps*. The mildness of the climate permits the most delicate plants and trees to flourish in the open air all through the winter.

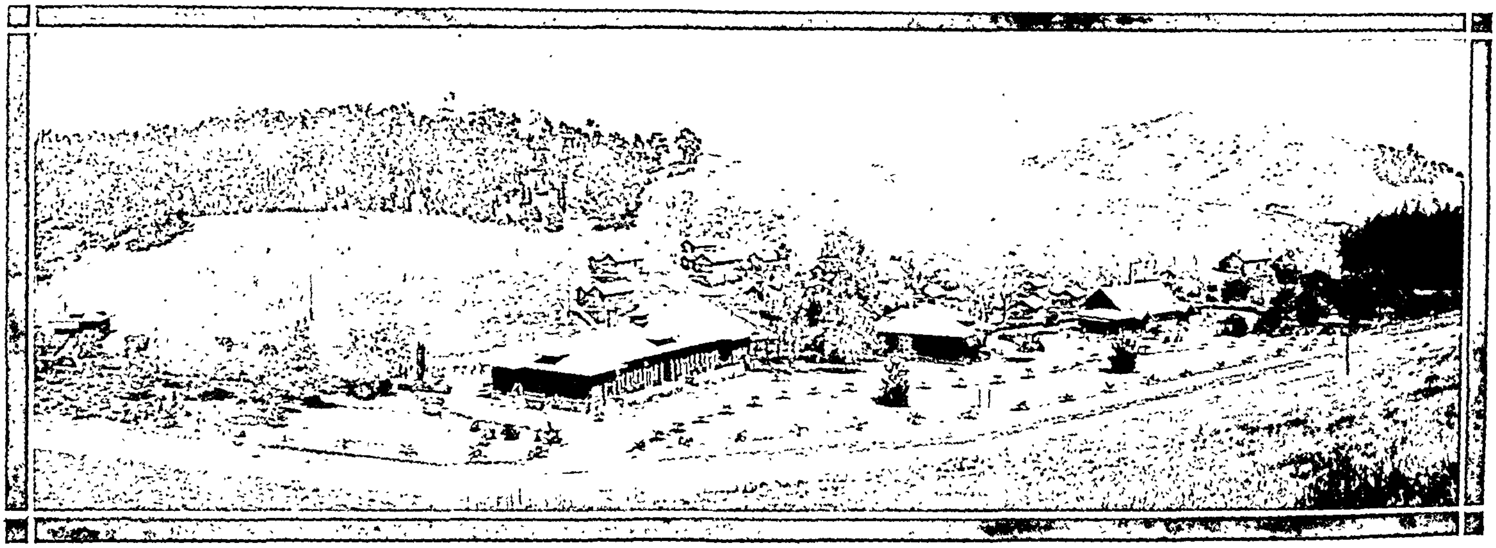


Fig. 2.—View of the Barlow Sanatorium for the Poor Tuberculous of the County of Los Angeles.

A great variety of architecture is found among the residences of Los Angeles. The picturesque and comfortable early mission style, which should have been more extensively adopted long ago by the American settlers, is at length coming into vogue. Some of the more pretentious of these mission residences have spacious tiled courtyards, covered with glass, in which fountains splash, flowers bloom and birds warble.

Another comfortable and artistic style of residence that has become exceedingly popular during the past few years is the bungalow, adapted from India—a cottage of one or one and one-half stories, with from three to seven rooms, built of lumber and shingled, with wide eaves.

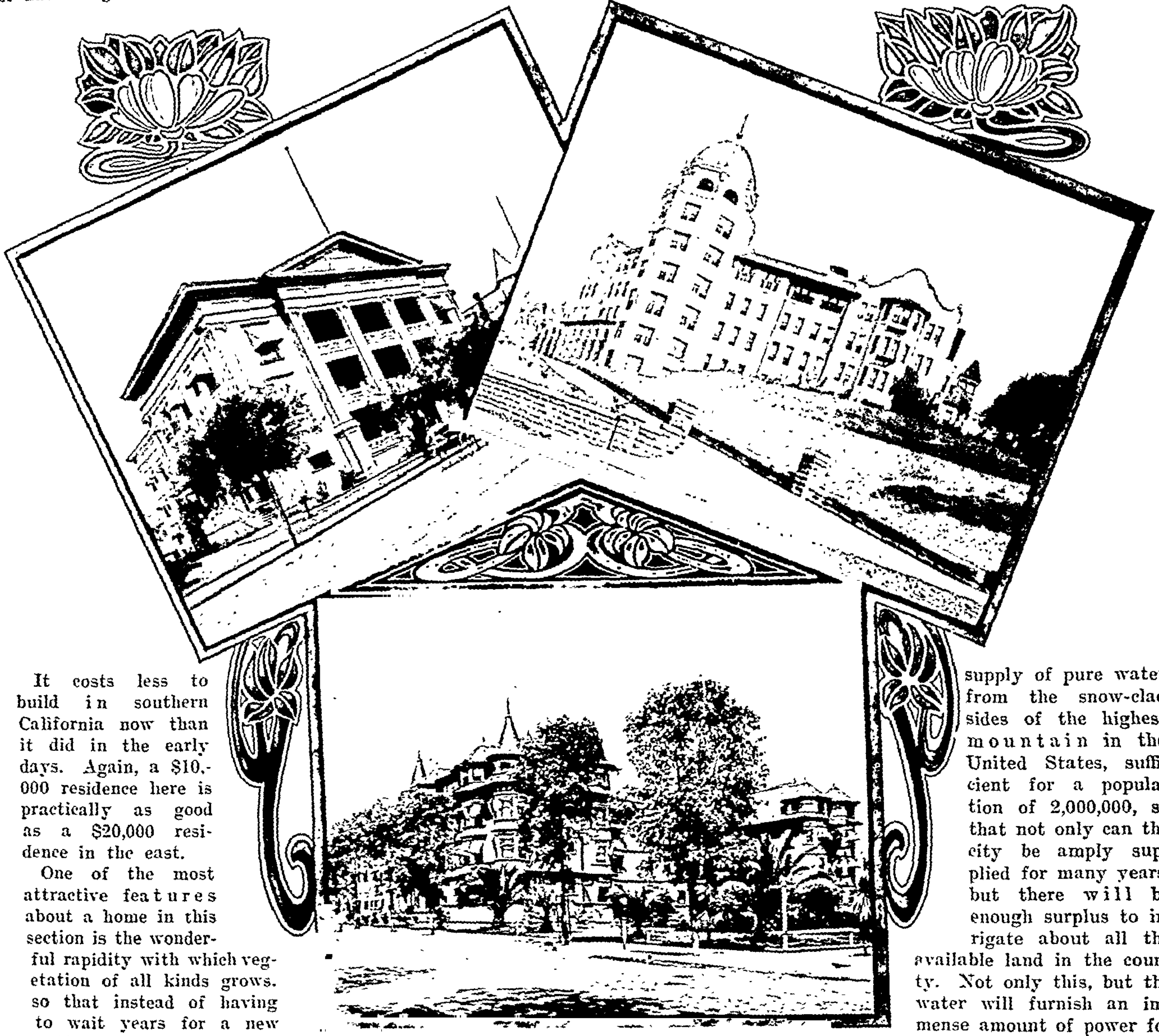


Fig. 3.—A group of Los Angeles hospitals: Pacific Hospital above to the left, the Sisters' Hospital at the right, and the California Hospital below.

It costs less to build in southern California now than it did in the early days. Again, a $10,000 residence here is practically as good as a $20,000 residence in the east.

One of the most attractive features about a home in this section is the wonderful rapidity with which vegetation of all kinds grows, so that instead of having to wait years for a new residence to assume a settled and homelike appearance, the owner has to wait only a few months until his house is surrounded with thrifty plants and climbing vines, while even some trees, such as the eucalyptus, grow to a respectable size within a year, and can be planted around the lot while less rapidly growing trees are attaining size, thus obviating the bare hard appearance attaching to new residences in less favored climates, however beautiful architecturally the building may be.

A Cosmopolitan Place

The population of Los Angeles is cosmopolitan. During the past twenty years it has received accessions to its population from every state in the Union and from almost every country in the world. For instance, a statement published in the Los Angeles *Times* showed that, a few years ago, of the 53,413 voters then on the register of Los Angeles County, only 5,244, or less than 10 per cent., were natives of California.

Water-Supply

The most notable thing that has ever happened to the city of Los Angeles is the acquirement by the city of water rights, extending for many miles along the banks of the Owens River, in Inyo County. This water will be brought to the city a distance of 220 miles, by means of an aqueduct and more than 20 miles of tunnels. Work is now rapidly progressing and will be completed in 1912. This will give Los Angeles a supply of pure water from the snow-clad sides of the highest mountain in the United States, sufficient for a population of 2,000,000, so that not only can the city be amply supplied for many years, but there will be enough surplus to irrigate about all the available land in the county. Not only this, but the water will furnish an immense amount of power for electric lighting and for power for factories. The cost of this great enterprise is estimated at $25,000,000. The bonds were carried by a vote of ten to one.

Climate

Decidedly the chief attraction of southern California is its climate. This is the feature that brings three-fourths of the eastern visitors to southern California.

Southern California—that is, the section we have indicated, especially including Los Angeles—has an "all-the-year-round" climate. This is a rare and inestimable feature, possessed by very few sections of the world. It is well to insist specially on this point, because very erroneous ideas prevail on the subject in the east, where it is generally believed, among those who have not spent an entire year with us, that the whole of California is a counterpart of hades during the summer—a veritable fiery furnace, as its name would indicate. Strangers have yet to learn that California *includes* within its limits almost as great a variety of climates as may be found in the world. Take, for instance, an August afternoon in San Francisco and at Indio in the Colorado desert. In the former place the inhabitants will be found attired in heavy overcoats and sealskin wraps, or seated around large open coal fires; at the latter a thin shirt and overalls are too warm for comfort. Los Angeles occupies a happy position between these two extremes, and our climate is shared, with slight variations, by the suburbs for 20 miles around, becoming somewhat moister and cooler toward the ocean, dryer and warmer toward the mountains.

The winter season is marked by the rains, which come between November and April. This is really the spring, when the grass and flowers mantle the hills. Usually the rain storms do not last more than two or three days at a time, with frequent spells of fine weather lasting ten days or more. The rainfall at Los Angeles for the past twenty-five years averaged about 16 inches, the lowest being 5.53 and the highest 38.13. Thunderstorms are very rarely experienced and cyclones are unknown. During the year an average of 316 days will be found with cloudless skies or when the sun is but partly obscured.

For a few days in summer the mercury rises high in Los Angeles, yet, owing to the dryness of the atmosphere, 100 degrees of heat is less oppressive than 80 degrees in New York. The cool trade wind from the Pacific is felt nearly all summer, and is the great modifier of the heat, rendering the hottest day bearable. In winter the modifying influences of a warm return current from the south are enjoyed, which, south of Point Conception, takes the place of the Pacific Gulf stream, the Japanese current Kuro-Shiwo, which sweeps down the Pacific Coast. This explains why the water at Santa Monica has a temperature of 61 degrees in January, while that of Newport on the Atlantic at the same time is 32 degrees.

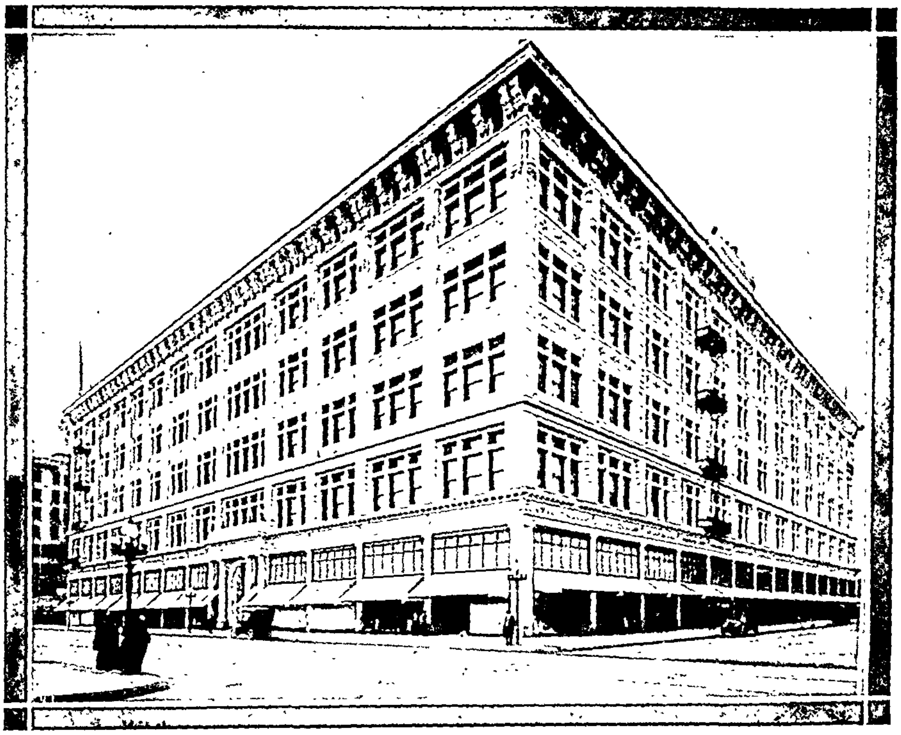


Fig. 4.—The Hamburger Building, Eighth and Broadway, where will be found the Registration Bureau, Post Office, Telegraph Office, Scientific Exhibit, Commercial Exhibit, and also the roof garden, where the general smoker will be given.

Facts About Los Angeles

Center of great oil-producing fields, as it also is of the great orange belt.

City will spend $10,000,000 on San Pedro harbor, already one of the best on the Pacific Coast.

Wholesale trade with the southwest, including Mexico, exceeds $300,000,000 a year and growing rapidly.

Shopping district compares favorably with any in the large eastern cities.

Local general colleges are the University of Southern California, Occidental College, Throop Polytechnic Institute (Pasadena), Pomona College (Pomona), and University of Redlands (Redlands).

Local medical colleges are two: the State University Medical Department (Los Angeles Branch), which gives instruction in the last two years only, the first two years' instruction being given at Berkeley; and the College of Physicians and Surgeons of the University of Southern California, which gives the regular four years' course.

Churches, all denominations, 225; public schools, 117; teachers employed, 1,440; school children census, 53,954; enrolment, 50,000; miscellaneous private schools and colleges, 40.

Public library contains 137,184 volumes, home circulation, 773,572. In addition, there are other libraries in the city with total of 103,643 volumes.

A resort both winter and summer, and one of the busiest and most enterprising cities in the United States, as it also is one of the most beautiful.

A dozen resorts on the Pacific Ocean may be reached within forty minutes by trolley and steam lines.

There are more than sixty cities and towns within two hours' ride of Los Angeles, having populations ranging from 500 to 40,000.

Short Trips from Los Angeles

The following comprise only a few of the trips that may be made from Los Angeles in a couple of days or less:

HALF-DAY TRIPS

Santa Monica, Ocean Park, Venice.

Terminal Island, Long Beach, San Pedro.

Redondo Beach, Hermosa, Manhattan, Playa del Rey.

Baldwin's Ranch, San Gabriel Mission.

Ostrich Farm, Soldiers' Home, Pasadena, Whittier, Hollywood and Cahuenga Valley.

Observation Car over the Los Angeles Railway.

ONE-DAY TRIPS

Mount Lowe; electric road and cable incline.

"Kite-Shaped Track" of the Santa Fe System, including stops at Riverside and Redlands.

"Inside Track" of the Southern Pacific, including stops at Pomona, Ontario, Redlands and Riverside.

"Orange Grove Trips" of the Salt Lake Route, with stop at Riverside and by trolley to Redlands.

"Balloon" trip of the Los Angeles-Pacific.

Tilton's Trolley Trip, Pacific Electric.

"Surf" trip of the Pacific Electric Railway.

Santa Ana, Orange, Tustin and surroundings.

Oil wells of Whittier, Fullerton and Puente.

Monrovia, Duarte, Azusa and Glendora (heart of San Gabriel Valley).

San Buenaventura, San Juan Capistrano Mission.

Santa Catalina Island, Santa Barbara.

TWO-DAY TRIPS

Wilson's Peak; railroad, electric, stage and burros; Elsinore.

San Luis Rey Mission; railroad and stage.

San Diego, Coronado Beach and Mexican line.

San Diego may be reached by railroad or by the Pacific Coast steamship line, by large, modern boats, sailing three times a week from San Francisco, and touching at Los Angeles Harbor. The distance is 120 miles and takes about seven hours.

THE SCIENTIFIC PROCEEDINGS

The Papers to Be Read at Los Angeles—The Preliminary Program and the Official Program

The following is a partial list of titles of papers to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program. This Official Program will be a pamphlet similar to those issued in the previous years, and will contain the final program of each section, with abstracts of the papers, lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of Los Angeles, etc. To prevent misunderstandings and to protect the interests of advertisers, etc., it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE

Chairman, Allen A. Jones, Buffalo, N. Y.; Secretary, Wilder Tileston, New Haven, Conn.

Clinical Phases of Arteriosclerosis (15 minutes). Thomas D. Coleman, Augusta, Ga.

Verruca Peruana or Carrion's Disease (15 minutes). H. A. Giltner, U. S. Navy.

Epidemiology of Pneumonia (10 minutes). C. M. Richter, San Francisco.

Successful Treatment of a Typhoid Bacillus-Carrier by Vaccination (10 minutes). Walter Brem and F. C. Watson, Cristobal, Canal Zone.

Causation and Treatment of Fever in Tuberculosis (10 minutes). F. M. Pottenger, Monrovia, Cal.

Streptothrix (Actinomycosis) of the Lungs (15 minutes). Norman Bridge, Los Angeles.

Hemorrhagic Erosions of the Stomach (10 minutes). N. W. Jones, Portland, Ore.

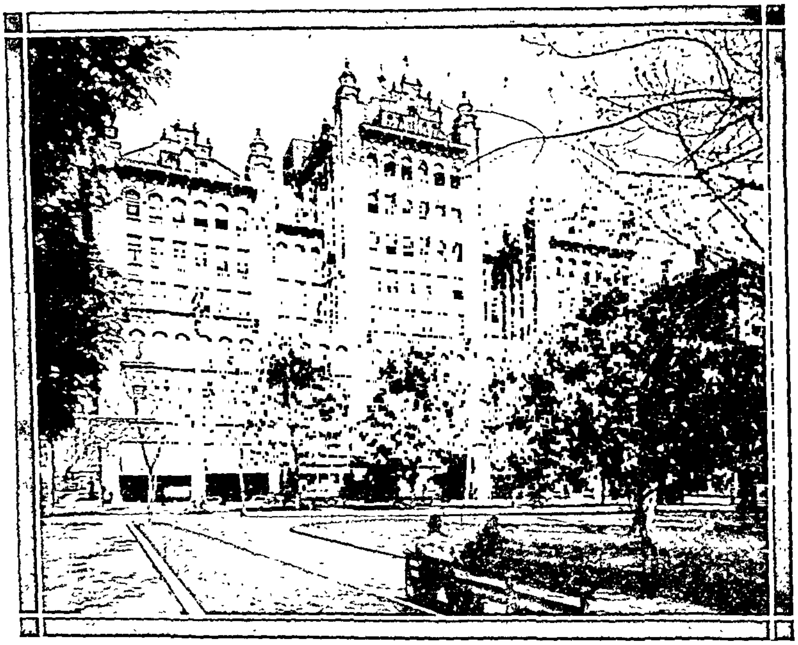


Fig. 5.—The Baptist Temple and Auditorium, Fifth and Olive Streets, where the general meeting will be held. Here also are halls for the meetings of the Section on Surgery, Section on Obstetrics and Diseases of Women, and Section on Preventive Medicine and Public Health.

Immuno-Diagnostics in Internal Medicine (15 minutes). W. J. Butler, Chicago.

The Leukocytology of Typhoid and Paratyphoid Fevers (10 minutes). J. F. Hultgen, Chicago.

Effects on Secondary Anemia by Hypodermic Injections (10 minutes). W. Jarvis Barlow, Los Angeles.

Reserve Renal Capacity in Chronic Interstitial Nephritis (10 minutes). Edward F. Wells, Chicago.

Pathologic Findings in Hypertension (10 minutes). Roger I. Lee, Boston.

Myatonia Congenita (Oppenheim); Report of a Case with Autopsy (15 minutes). W. T. Councilman and C. H. Dunn, Boston.

New Clinical Values in the Treatment of the Gastric Neuroses (15 minutes). Charles L. Greene, St. Paul, Minn.

Infantilism with Disease of the Pituitary Gland (15 minutes). A. W. Hewlett, Ann Arbor, Mich.

Importance of Quantitative Regulation of Diet (15 minutes). H. D. Arnold and R. C. Larrabee, Boston.

Pleurisy and Empyema in Pneumonia (10 minutes). J. M. Anders, Philadelphia.

Value of So-Called Digestants in Preparation of Materials to be Examined for Acid-Fast Organisms (particularly Tubercle Bacilli), with Clinical Results of Two Years' Study of "Antiformin" (10 minutes). Frank Smithies, Ann Arbor, Mich.

Experimental and Clinical Studies of a Modified Vaccine Treatment of Pneumococcus Infections in Animals and Man (20 minutes). S. P. Beebe, New York, and P. K. Brown, San Francisco.

SYMPOSIUM ON SYPHILIS

Laboratory Diagnosis of Syphilis (15 minutes). L. S. Schmitt, San Francisco.

Visceral Syphilis (20 minutes). Frank Billings, Chicago.

Value of the Wassermann Reaction and of Salvarsan (15 minutes). Albert Keidel, Batimore.

Disadvantages Incident to the Administration of Salvarsan (10 minutes). D. W. Montgomery, San Francisco.

Adequate Treatment of Syphilis (15 minutes). W. T. Wootton, Hot Springs, Ark.

Salvarsan (10 minutes). E. G. Ballenger, Atlanta, Ga.

Treatment of Diabetes (15 minutes). A. J. Hodgson, Waukesha, Wis.

Early Diagnosis of Hyperthyroidism (15 minutes). John A. Witherspoon, Nashville, Tenn.

Bubonic Plague with Special Reference to that of Ground Squirrel Origin (15 minutes). G. W. McCoy, San Francisco

Treatment of Intestinal Amebiasis (15 minutes). W. E. Musgrave, Manila, Philippine Islands.

Experimental Work on Intestinal Auto-Intoxication (20 minutes). J. W. D. Maury, Rochester, Minn.

Some Obscure Conditions of the Digestive Tract as Studied by the Roentgen Ray (20 minutes). G. R. Satterlee and L. T. LeWald, New York.

Availability of Roentgen Rays in the Clinical Study of the Pancreas (10 minutes). A. W. Crane, Kalamazoo, Mich.

Oration in Medicine: A Clinical Study of Disturbances in Rate and Rhythm of Respiration. C. F. Hoover, Cleveland, Ohio.

Relation of the Symptomatology and Pathology to Operative Mortality in Exophthalmic Goiter (10 minutes). H. S. Plummer, Rochester, Minn.

Mobility of the Heart. Dudley Fulton, Los Angeles.

SYMPOSIUM ON POLIOMYELITIS

Joint Meeting With the Section on Diseases of Children

Epidemiologic and Etiologic Studies of Acute Poliomyelitis in Pennsylvania (20 minutes). Samuel G. Dixon, Harrisburg, Pa., and H. T. Karsner, Philadelphia.

Recent History and Etiology of Infantile Paralysis (20 minutes). R. W. Lovett and M. W. Richardson, Boston.

Pathology, Symptomatology, Diagnosis, Prognosis, Prophylaxis and Treatment of Infantile Paralysis (20 minutes). R. W. Lovett and M. W. Richardson, Boston.

Infantile Paralysis as Observed in Massachusetts, 1907-1910 (20 minutes). R. W. Lovett and M. W. Richardson, Boston.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN

Chairman, H. G. Wetherill, Denver; Secretary, C. Jeff Miller, New Orleans

Chairman's Address: Retrospection and Introspection: Our Opportunities and Obligations. H. G. Wetherill, Denver.

Carcinoma of the Clitoris and Report of Case.
Charles D. Lockwood, Pasadena, Cal.

Torsion of a Subserous Pedunculated Fibroid Complicating Pregnancy at Four and One-Half Months. Operation; Recovery with Delivery at Term.
E. M. Lazard, Los Angeles.

Adiposity of the Mammary Glands.
J. R. Guthrie, Dubuque, Iowa, and Henry Albert, Iowa City, Iowa.

The Exciting Causes, Means of Prevention and Early Treatment of Cancer of the Uterus.
A. E. Benjamin, Minneapolis.

Hemorrhagic Degeneration in Myomas.
Arthur E. Hertzler, Kansas City, Mo.

Introduction and Development of Antiseptic Surgery in America.
Henry O. Marcy, Boston.

Parametritis Posterior and its Associated Reflex Disturbances.
Fred J. Taussig, St. Louis.

Prevention of Postoperative Gynecologic Psychoses.
H. P. Cole, Mobile, Ala.

Value of Pyelography.
W. F. Braasch, Rochester, Minn.

Postoperative Urinary Retention and Cystitis.
J. H. Jacobson and J. G. Keller, Toledo, O.

Pericystitis.
M. L. Harris, Chicago.

Removal of Ureteral Calculi by Cystoscopic Methods.
Bransford Lewis, St. Louis.

Pathologic Kinks and Adhesions in the Terminal Portion of the Ileum.
Franklin H. Martin, Chicago.

Treatment of 140 Consecutive Cases of Uterine Myoma
Walter B. Dorsett, St. Louis.

Surgical Treatment of Ptosis of Abdominal Organs by Hammock Operation.
R. C. Coffey, Portland, Ore.

Essential Points in Round-Ligament Surgery.
Channing W. Barrett, Chicago.

Use of the Pessary in Retroversion of the Uterus and the Mechanism of its Support.
J. Riddle Goffe, New York.

Utero-Vaginal Prolapse in Elderly Women.
George B. Somers, San Francisco.

Relation of Appendicitis to Adnexal Inflammation of the Right Side.
H. J. Boldt, New York.

Special Considerations in the Surgical Treatment of the Female Pelvic Organs.
Henry Parker Newman, San Diego, Cal.

Proper Operative Period and Methods of Drainage in Pelvic Infections.
L. G. Bowers, Dayton, O.

The Employment in Abdominal Surgery of Two Rubber Drainage Tubes with a Single Stab Wound Exit, Instead of a Single Tube with Exit by Incision or Otherwise Wherever Drainage is Desired.
Philander A. Harris, Patterson, N. J.

Postoperative Complications.
F. F. Simpson, Pittsburg, Pa.

Two Years' Experience with Vaccine in Obstetric and Gynecologic Infections.
John O. Polak, Brooklyn, N. Y.

Primary Carcinoma of the Fallopian Tube.
E. E. Montgomery, Philadelphia.

Prolapse of the Gravid Uterus.
Palmer Findlay, Omaha, Nebr.

Pernicious Vomiting of Pregnancy.
C. B. Ingraham, Denver.

Tuberculosis and Pregnancy.
George C. Mosher, Kansas City, Mo.

A Study of Cholecystitis and Cholelithiasis in Their Relation to Pregnancy.
Laura H. Branson, Iowa City, Ia.

Axis Traction Forceps.
J. P. McMahon, Milwaukee, Wis.

Cesarean Section: Indications and Technic: Report of seventeen cases.
T. Mitchell Burns, Denver.

SECTION ON SURGERY

Chairman, George W. Crile, Cleveland; Secretary, John T. Bottomley, Boston

Brachial Palsy.
Charles H. Frazier, Philadelphia.

Results of Operations on the Gasserian Ganglion for Trigeminal Neuralgia.
Harvey Cushing, Baltimore.

The Advantages of the So-Called Decortication of the Lung for Old Empyemata.
Fred B. Lund, Boston.

The Precancerous Lesions in One Thousand Skin Cancers.
Joseph C. Bloodgood, Baltimore.

Pylorectomy or Excision of the Ulcer-Bearing Area.
William L. Rodman, Philadelphia.

A Plea for More Direct Methods in Dealing with Gastric Ulcers.
R. C. Coffey, Portland, Oregon.

Oration on Surgery: Ascending and Hematogenous Infections of the Kidney.
George E. Brewer, New York.

Treatment of Localized Appendicular Abscess.
Van Buren Knott, Sioux City, Iowa.

Subphrenic Abscess, the Result of Acute Infection of the Appendix.
George G. Ross, Philadelphia.

Diabetes, a Surgical Disease.
John B. Deaver, Philadelphia.

The End-Results of Gall-Bladder Surgery.
E. MacDowell Stanton, Schenectady, N. Y.

Typhoid Infection of the Biliary Tract.
Charles N. Smith, Toledo, Ohio.

Factors Hostile to Success in Gall-Bladder Surgery.
B. B. Davis, Omaha.

The Pathology and Treatment of Tuberculosis of the Long Bones.
Howard Stiles, Edinburgh, Scotland.

The Three Main Rules in the Treatment of Adult Joint Tuberculosis.
Leonard W. Ely, Denver.

Gonorrheal Osteoperiosteitis of the Long Bones.
Stephen H. Watts, Charlottesville, Va.

Direct Experimental Transplantation of Tendons and Fascia.
Dean D. Lewis and Carl B. Davis, Chicago.

Experimentally Produced Intestinal Obstruction.
Fred T. Murphy and Beth Vincent, *Boston.*

Study of Five Hundred Cases of Prostatectomy.
Edward S. Judd, Rochester, Minn.

Sensibility of the Peritoneum and Abdominal Viscera.
James F. Mitchell, Washington, D. C.

Several Unusual Joint Cases, Their Treatment and the Results.
George W. Guthrie, Wilkes-Barre, Pa.

Spinal Fractures.
A. F. Jonas, Omaha.

Thirty Years' Experience with Fractures at Minnequa Hospital.
R. W. Corwin, Pueblo, Colo.

Pinning Fragments of Bone Beneath the Fluoroscopic Screen; A Simple Procedure to Aid the Splint in Selected Cases.
Robert T. Morris, New York.

The Open Treatment of Fractures.
Edward Martin, Philadelphia.

Clinical and Experimental Work to Determine the Value of Lane's Plate in Treatment of Fractures.
Willard Bartlett and M. R. Hewitt, St. Louis.

New Methods for Closing Skin Wounds.
E. Wyllys Andrews, Chicago.

Lingual, Sublingual and Other Aberrant Thyroids.
Charles H. Mayo, Rochester, Minn.

The Theory for the Pathologic Physiology Involved in Diseases of the Thyroid and Its Therapeutic Application.
John Rogers, New York.

Factors Influencing the Safety of Surgical Treatment for Goiter.
M. B. Tinker, Ithaca, N. Y.

Lymphangiomata of the Omentum and Omental Cysts.
Stanley Stillman, San Francisco.

Tumors of the Mesentery.
H. A. Royster, Raleigh, N. C.

Rhinoplasty; a Suggestion for Preventing Contracture of the Nares After Operation.
E. Denegre Martin, New Orleans.

A New Technic for Rectopexy for Rectal Prolapse.
L. L. McArthur, Chicago.

Surgery of the First Portion of the Left Subclavian Artery, with Report of a Case of Successful Ligation.
James M. Neff, Spokane, Wash.

A Plea for Larger Incision and More Thorough Examinations in Abdominal Surgery.
James E. Moore, Minneapolis.

Membranous Pericolitis.
Jabez N. Jackson, Kansas City, Mo.

The Surgical Treatment of Megacolon.
Wallace I. Terry, San Francisco.

Wooden Phlegmon of the Neck (Reclus).
Charles A. Powers, Denver.

SECTION ON OPHTHALMOLOGY

Chairman, Albert E. Bulson, Jr., Fort Wayne, Ind.; Secretary, Edgar S. Thomson, New York City

Chairman's Address.
Albert E. Bulson, Jr., Fort Wayne, Ind.

Healing of Iridectomy Wounds and Its Influence on Glaucoma.
Adolph Alt, St. Louis.

Significance of Non-Syphilitic Retinitis, Based on a Study of the Subsequent History of 187 Cases.
F. T. Rogers, Providence, R. I.

Treatment of Purulent Ophthalmia and Simple Means for Its Prevention in Infants.
Mark D. Stevenson, Akron, O.

Further Report on Corneal Regeneration.
M. Wiener, St. Louis.

Immediate Removal of Traumatic Cataracts.
J. A. Donovan, Butte, Mont.

Medical Treatment of the Patient Before or After Cataract Extraction. D. W. Greene, Dayton, O.

A New Operation for Extraction of Cataract in Its Capsule. Vard H. Hulen, Houston, Tex.

Intrusion of the Amnion as a Possible Cause of Congenital Cataract. Otto Landman, Toledo, O.

Intra-Ocular Neoplasms, With Report of Five Cases. F. Park Lewis, Buffalo, N. Y.

Another Case of Chloroma Arthur J. Bedell, Albany, N. Y.

Distortion of the Visual Fields Observed in a Series of 200 Cases of Brain Tumor. Harvey Cushing and G. J. Heuer, Baltimore.

Subhyaloid and Vitreous Hemorrhages. Hiram Woods, Baltimore.

Report of the Committee on Collective Investigation Concerning the Ocular Muscles. Lucein Howe, Buffalo, N. Y.; Howard F. Hansell and Theodore B. Schneideman, Philadelphia.

The Optometry Question and the Larger Issue Behind it. Edward Jackson, Denver.

Shortening of an Ocular Muscle by Tucking. H. W. Woodruff, Joilet, Ill.

A New Method in Operating for Ectropion. A. Edward Davis, New York.

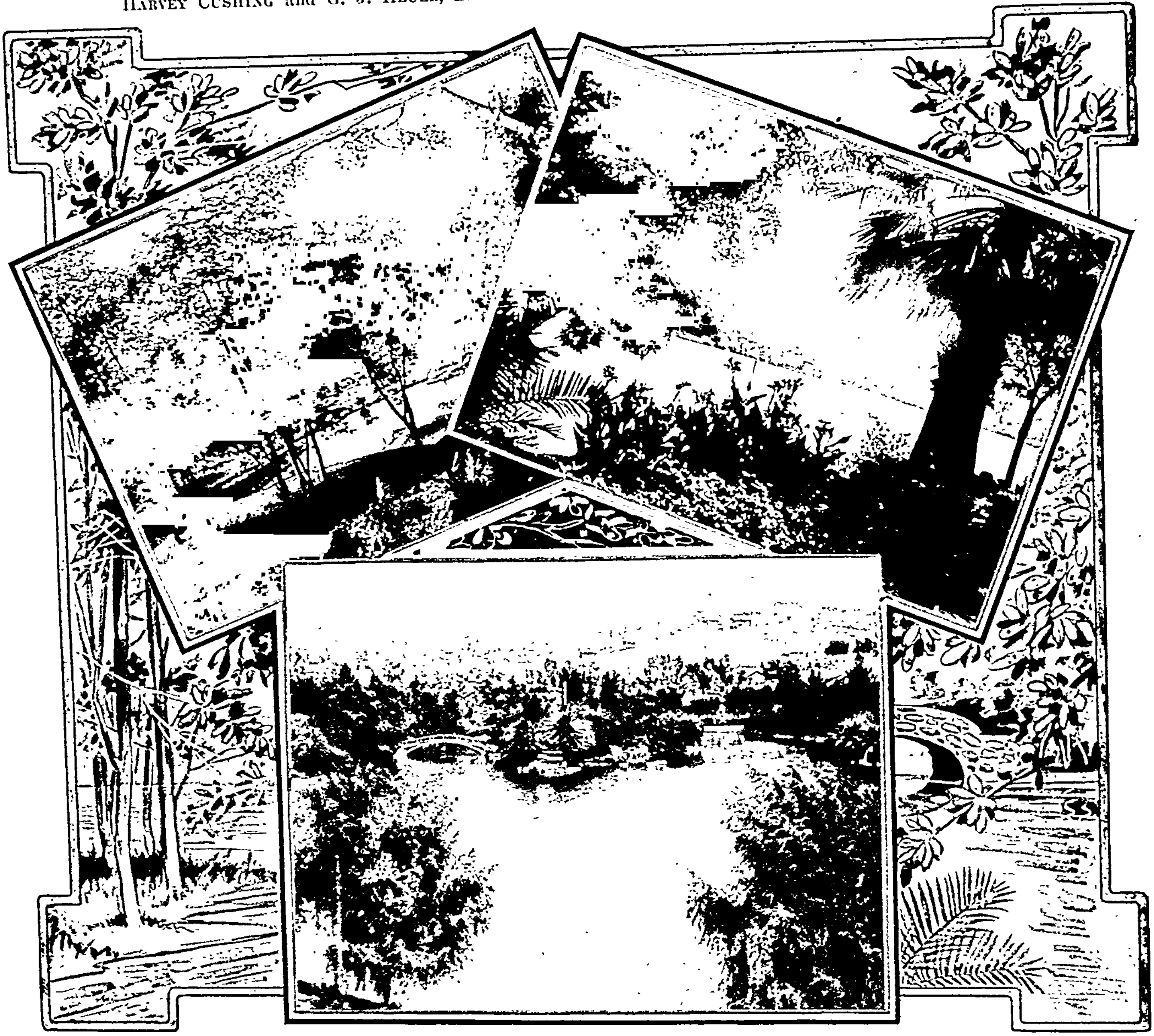


Fig. 6.—A group of park views, including one of the famous sunken gardens.

Report of Nine Cases of Brain Tumor. Sherman Voorhees, Elmira, N. Y.

Tuberculous Interstitial Keratitis, with Special Reference to Treatment with Tuberculin. R. S. Lamb, Washington, D. C.

Use of Tuberculin in Corneal Lesions in General, and Phlyctenular Keratitis in Particular. R. J. Tivnen, Chicago.

Tuberculous Cyclitis Occurring in a Previously Injured Eye, Simulating Intra-Ocular Tumor. Oscar Dodd and Francis Lane, Chicago.

The Venous Pulse and Blanching of Retinal Vessels, Induced by Making Pressure on Eyeball, an Index to General Blood-Pressure. Melville Black, Denver.

Fundus Lesions Associated with Alterations in the Composition of the Blood. James Bordley, Jr., Baltimore.

Plastic Surgery of the Eyelids, Using the Wolffe Graft. F. Phinizy Calhoun, Atlanta, Ga.

Ocular Discomfort, the Result of Near Use of the Eyes Under Modern Artificial Illumination. Nelson M. Black, Milwaukee, Wis.

Changes Occurring in the Refraction of Corrected Ametropic Eyes. William Zentmayer, Philadelphia.

Refraction Changes in Diabetes. Cassius D. Westcott and John B. Ellis, Chicago.

The Psychologic Aspect of Refraction. S. L. Ledbetter, Birmingham, Ala.

Nystagmus. E. R. Lewis, Dubuque, Ia.

The Ocular Conjugate and Fusion Brain Centers; Only Two Axes of Ocular Rotations, and Only Two Planes of Reference. G. C. Savage, Nashville, Tenn.

SECTION ON LARYNGOLOGY AND OTOLOGY

Chairman, Dunbar Roy, Atlanta, Ga.; Secretary, George E. Shambaugh, Chicago

Chairman's Address. Dunbar Roy, Atlanta, Ga.

Treatment of Tuberculosis by Sanatorium Method in the Southwest. E. S. Bullock, Silver City, N. M.

Histologic Examination of the Faucial Tonsils With Reference to Tuberculosis. E. C. Sewall, San Francisco.

Laryngeal Growths. J. McCoy, New York.

A Nasal Rubber Tampon. Mark D. Stevenson, Akron, O.

Symposium on Diseases of the Frontal Sinus

Pathologic Conditions Involving the Frontal Sinus. B. R. Shurly, Detroit.

Conditions in the Frontal Sinus Which Require an External Operation. C. M. Cobb, Boston.

Indications for Intranasal Operations for the Relief of Frontal Sinus Disease. Harmon Smith, New York.

Report of Twenty-Eight Killian Operations. Henry Horn, San Francisco.

Recognition of Serous Labyrinthitis. J. R. Fletcher, Chicago.

Report of a Case of Primary Infection of the Sigmoid Sinus and Jugular Vein. Sherman Voorhees, Elmira, N. Y.

Symposium on Relations of Nasal Accessory Sinuses and Diseases of the Eye

Anatomic Conditions which Have Practical Bearing on Relations Between Diseases of Nasal Accessory Sinuses and Diseases of Eye. W. E. Sauer, St. Louis.

Eye Complications Arising from Diseases of the Nasal Accessory Sinuses. A. H. Andrews, Chicago.

Operative Treatment of Suppurative Sinus Disease Producing Orbital Complications. J. H. Bryan, Washington, D. C.

Improved Technic for Skin Grafting in the Radical Mastoid Operation. C. F. Welty, San Francisco.

Diagnosis of Retrolabyrinthine Affections. H. B. Graham, San Francisco.

Symposium on Relations Between Middle-Ear Diseases and Conditions in the Nose and Throat

Influence of Climate on Middle-Ear Diseases. J. J. Pattee, Pueblo, Colo.

How Far May Conditions in the Nose and Throat be Responsible for Middle-Ear Diseases? W. R. Murray, Minneapolis.

What Improvement Can Rationally be Expected from Treatment Applied to the Nose and Throat in Cases of Middle-Ear Deafness? J. F. Barnhill, Indianapolis.

SECTION ON NERVOUS AND MENTAL DISEASES

Chairman, W. A. Jones, Minneapolis; Secretary, E. E. Southard, Cambridge, Mass.

Chairman's Address: The Sensory Pathway. W. A. Jones, Minneapolis.

Arthritic Muscular Atrophy, Clinical and Experimental. Charles Lewis Allen, Los Angesles.

A Year's Experience with Salvarsan in Treatment of Chronic Nervous Diseases Consecutive to Syphilis. Joseph Collins, New York.

Nervous and Mental Diseases Following Castration in Women: A Statistical Study of 237 Cases. Alfred Gordon, Philadelphia.

Recognition of the Preneurasthenic and Pre-Insane Condition in the Young, with Reference to Prevention: A Study for the General Practitioner. Ross Moore, Los Angeles.

Auto-Intoxication as a Cause of Mental Disease. L. Vernon Briggs, Boston.

A Hitherto Undescribed Symptom in Paralysis Agitans: The Cog-Wheel Movement of the Extremities. Harold N. Moyer, Chicago.

Cerebellopontine Tumors, Their Treatment and Possible Complications in Their Diagnosis. A. T. Bristow, Brooklyn, N. Y.

The Training Camp Idea in Treatment of Neurasthenic and Allied Functional Diseases. T. J. Orbison, Pasadena.

Surgery of the Nervous System. Harvey Cushing, Baltimore.

Parietal Lobe Lesions in Cortical Disease. E. E. Southard, Cambridge, Mass.

The Peripheral Nerves in Experimental Poliomyelitis. E. W. Mooers, Boston.

Voracity in Mental Diseases. J. Ralph Jacoby and Edward Livingston Hunt, New York.

Traumatic Nervous Diseases, with Special Considerations of the Prognosis. T. Diller, Pittsburg, Pa.

The Study of Tumors of the Acoustic Nerve. J. Ramsay Hunt, New York.

Tuberculous Meningitis: A Pathologic Study. John H. W. Rhein, Philadelphia.

Differential Points in Tabes Dorsalis and General Paresis. Edward Fisher, New York.

Chorea: A Study. H. A. Cotton, Trenton, N. J.

The Relationship of Drug Addicton to Neurology and Psychiatry. C. C. Wholey, Pittsburg, Pa.

State Cure of Drug and Alcoholic Habitués. Daniel Crosby, Oakland, Cal.

Distinct Neuropsychoses Common to All Cases of Inebriety and Alcoholism. T. D. Crothers, New Haven, Conn.

Recent Advances in Treatment of Narcotic Drug Addictions. C. L. Case, Oakland, Cal.

Chronic Alcoholism: What Can and What Cannot be Accomplished by Treatment. George E. Pettey, Memphis, Tenn.

Importance of Determining the Cause of Inebriety. Benjamin T. Burley, Worcester, Mass.

Neuropathologic Studies. G. Y. Rusk, Berkeley, Cal.

Defects of the Mouth and Throat and Their Relations to Cerebral Disorders. George V. I. Brown, Milwaukee, Wis.

Experimental Poliomyelitis. Drs. Lucas and Osgood, Boston.

Spinal Pachymeningitis. James J. Putnam, Boston.

Tabetiform Degenerations in a Case of Compression of the Spinal Cord by Aortic Aneurysm. J. B. Ayer, Boston.

The Diagnosis and Prognosis of the Unfit. Louise Patterson, Vineland, N. J.

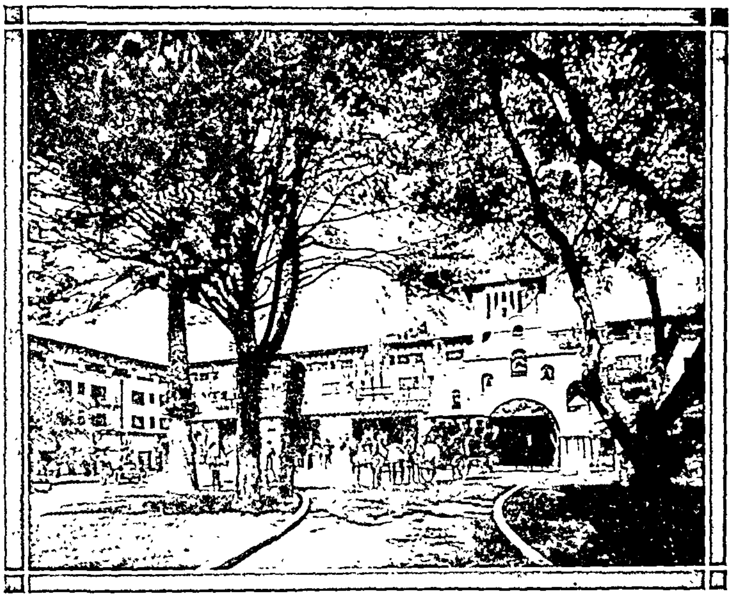


Fig. 7.—View of Glenwood Mission Inn, Riverside, with pleasure parties just about to drive away.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Chairman, W. A. Evans, Chicago; Secretary, C. Hampson Jones, Baltimore

Ventilation of Cars. T. R. Crowder, J. A. Denny and C. A. Schroyer, Chicago.

Prevention of Ophthalmia Neonatorum. F. Park Lewis, Buffalo, N. Y.

Control of Venereal Disease by a Municipality. Guy L. Kiefer, Detroit, Mich., and George M. Kober, Washington, D. C.

Public Education. J. N. Hurty, Indianapolis; W. F. Snow, Stanford University, California, and Oscar Dowling, Shreveport, La.

Typhoid Fever. L. L. Lumsden, Washington, D. C.; W. C. Rucker, P. H. & M.-H. S., and A. W. Freeman, Richmond, Va.

Small-Pox. H. M. Bracken, St. Paul, Minn.

Control of Tuberculosis, Laws, etc., for Resort Communities. G. W. Holden, Montclair, Colo.; W. J. Barlow, Los Angeles, Cal., and W. H. Anderson, El Paso, Texas.

Laws for Small Communities. B. F. Royer, Harrisburg, Pa.

Disinfectants. W. E. Post and E. K. Nicoll, Chicago.

Controlling Hydrophobia in the Human Subject. A. M. Stimson, Washington, D. C.

Methods for Controlling Diphtheria. C. Hampson Jones, Baltimore; M. L. Price, Baltimore, and W. C. Woodward, Washington, D. C.

Control of Bovine Tuberculosis in Relation to Milk Supply. M. P. Ravenel, Madison, Wis.

Pasteurization. P. G. Heinemann and E. O. Jordan, Chicago.

Plague Control Methods. Rupert Blue, San Francisco.

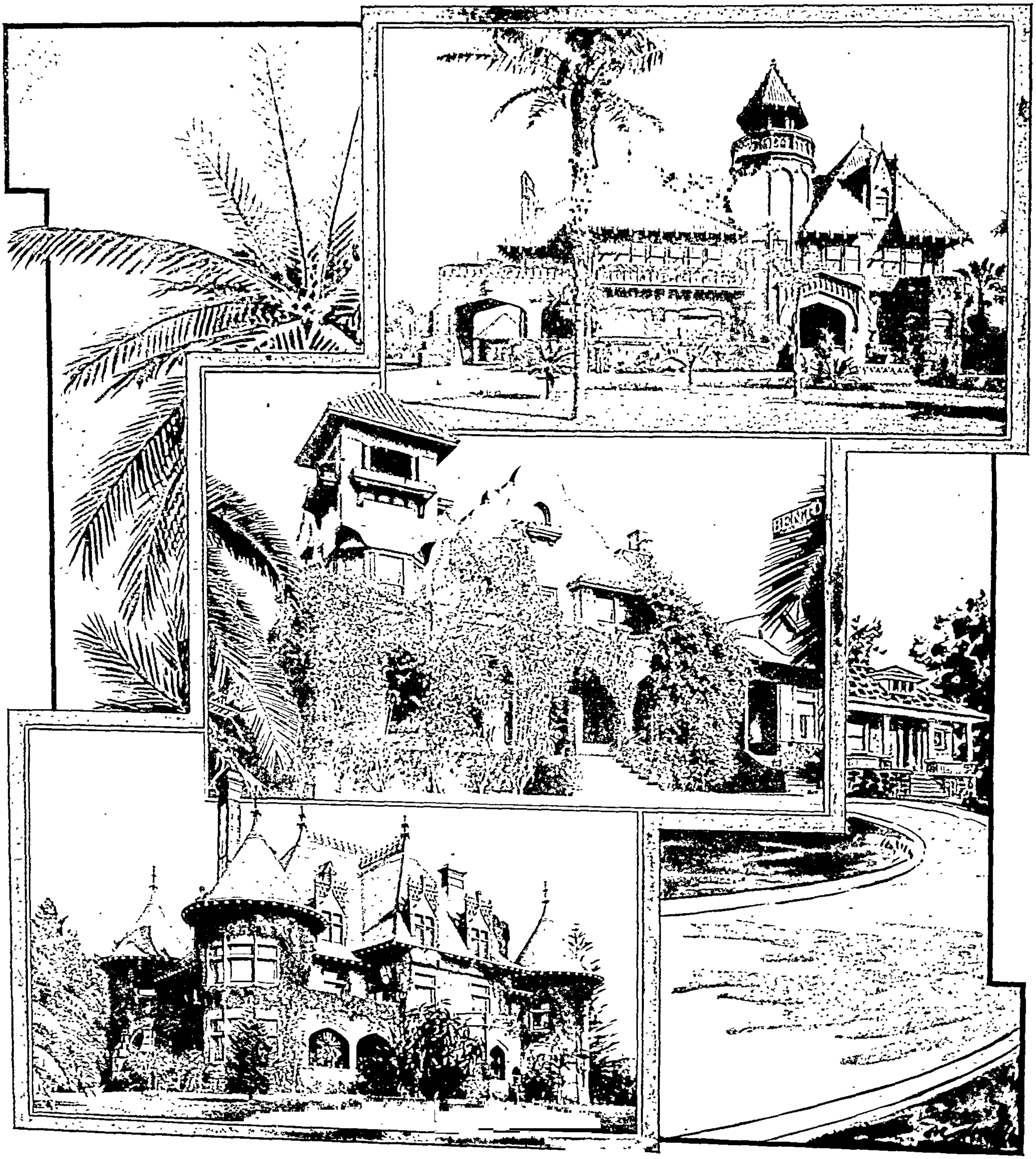


Fig. 8.—A group of residences. Note the characteristic California foliage.

Controlling Privy Vaults and Night Soil in a City. Clyde E. Ford, Cleveland, and R. G. Broderick, San Francisco.

Educating a City in Public Health. Raymond Russ, San Francisco; D. L. Edsall, Philadelphia, and E. R. Pritchard, Chicago.

Houses for Working Men. C. C. Browning, Monrovia, Cal., G. H. Kress, Los Angeles, Cal., and C. B. Ball, Chicago.

Purification of Sewage. Rudolph Hering, New York, and Arthur Lederer, Chicago.

Methods of Controlling a Milk Supply in Cities with a Railroad Haul. E. J. Lederle, New York.

Prompt Marketing of Milk. L. S. Mace, San Francisco.

Physical Examination of School Children. George L. Leslie, E. C. Beach, Los Angeles, and E. B. Hoag, Pasadena, Cal.

Control of Oysters.
H. W. Wiley and Charles Wardell Stiles, Washington, D. C.

Methods for Control of Tuberculosis in a Resort State.
W. S. Godfrey and T. Y. Hull, San Antonio, Texas.

Pellagra. C. F. Williams, Columbia, S. C.; W. S. Rankin, Raleigh, N. C., and H. F. Harris, Atlanta, Ga.

Legal Principles of Police Power.
W. A. Evans, Chicago; H. B. Hemenway, Evanston, Ill., and Hon. Harry Olson, Chicago.

Efficiency Methods in Public Health Work. G. Koehler, Chicago.

Control of Contagion Through Doctors and Nurses.
Heman Spalding, J. D. Rawlings and H. Cohen, Chicago.

Infantile Paralysis. Methods for Control. W. H. Frost P. H. & M.-H. S.. S. G. Dixon, Harrisburg, Pa.

Public Exhibits for Permanent Installation. Frank B. Wynn, Indianapolis.

The Cause of Arteriosclerosis and Its Prevention. Louis F. Bishop, Buffalo, N. Y.

Woman's Place in the Public Health Movement. Rosalie Slaughter Morton, New York.

The Reportability of Syphilis and Gonorrhea. Frances M. Greene, Cambridge, Mass.

Control of Drinking-Water.
W. F. Dutton, Carnegie, Pa., and G. E. Fell, Buffalo, N. Y.

Blood-Pressure and Its Bearing on Public Health Problems.
Harley E. McDonald, Los Angeles

Advisability of Government Medical Control of the Hygienic Factors of the Waters of the Great Lakes.
G. E. Fell, Buffalo, N. Y.

The Methods of Making Throat Cultures.
F. O. Tonney, Chicago.

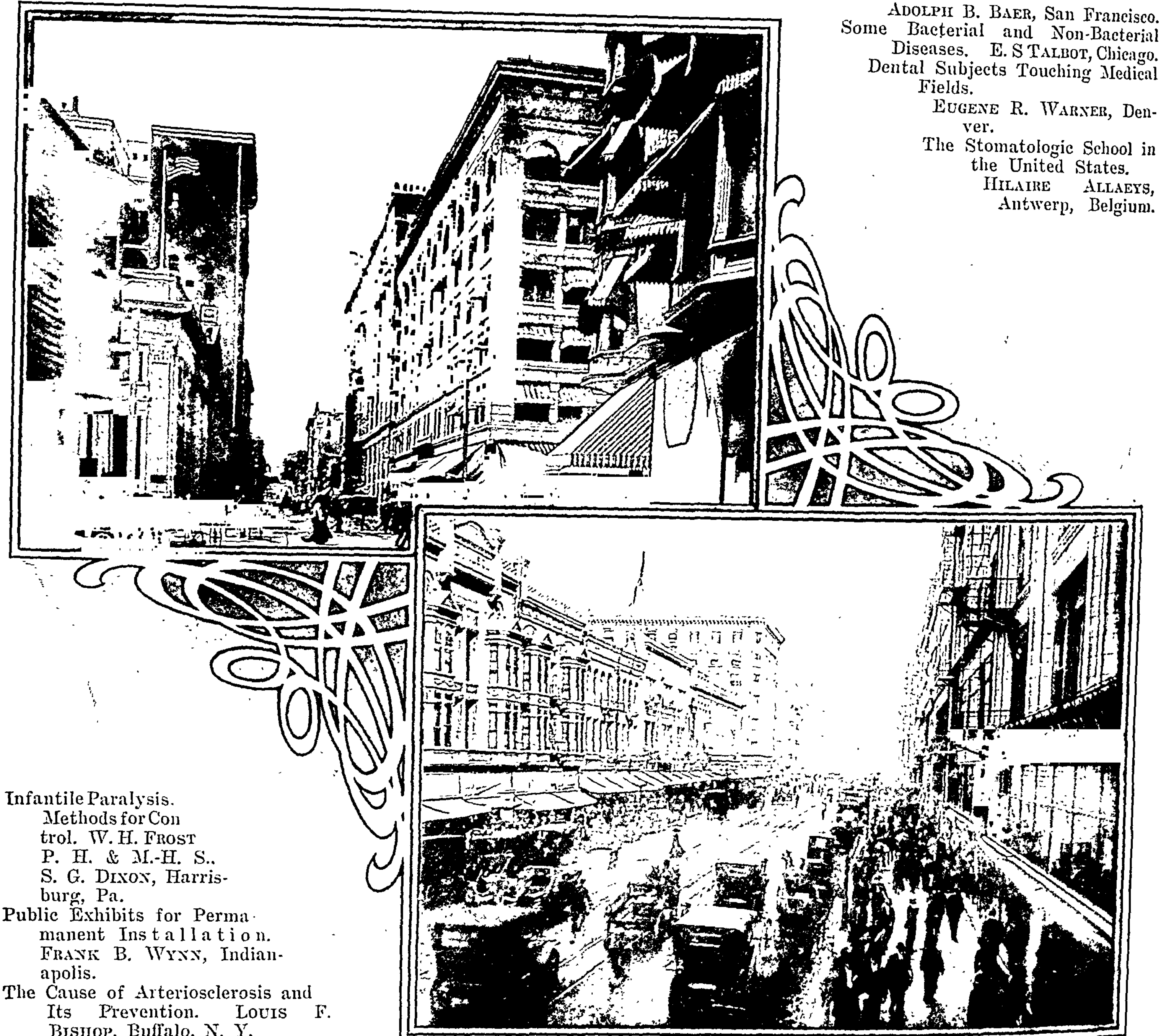


Fig. 9.—Street views. The picture above is at Fourth and Main Streets, looking west. Farmers and Merchants Bank on left. Hotel Westminster and Hotel Van Nuys on right; also H. W. Hellman Building. The tall building in the rear of the banks is the Union Trust Building, the last two being on the corner of Fourth and Spring Streets; the view below is a bit of Broadway, one of the main shopping streets of the city.

SECTION ON STOMATOLOGY

Chairman, Stewart L. McCurdy, Pittsburg, Pa.; Secretary, Eugene S. Talbot, Chicago.

Oral Development in the Progeny Influenced by the Buccal Tissues During Pregnancy. Arthur Zentler, New York.

Importance of the Deciduous Teeth in the Development of the Child. M. Evangeline Jordon, Los Angeles, Cal.

Alteration in Nostril from Birth to Puberty: Relation to Operations on Lip and Nose. T. E. Carmody, Denver.

Speech Defects Due to Imperfect Development Without Cleft Palate. George V. I. Brown, Milwaukee, Wis.

Acute Mercurial Poisoning Followed by General Necrosis of Maxillæ and Otitis.
Adolph B. Baer, San Francisco.

Some Bacterial and Non-Bacterial Diseases. E. S Talbot, Chicago.

Dental Subjects Touching Medical Fields.
Eugene R. Warner, Denver.

The Stomatologic School in the United States.
Hilaire Allaeys, Antwerp, Belgium.

(a) Report of the Committee on the Advancement of Stomatologic Education. (b) Report from the Committee on the Advancement of Stomatologic Education from the American Medical Association to The Carnegie Foundation for the Advancement of Teaching.
Eugene S. Talbot, Chicago; Herbert A. Potts, Chicago; Frederick B. Moorehead, Chicago.

Intimate Relation Between Condition of Oral Cavity and General Health. C. Deichmiller, Los Angeles.

Osteomyelitis of Maxilla. A. B. Baer, San Francisco.

SECTION ON DISEASES OF CHILDREN

CHAIRMAN, S. M. HAMILL, PHILADELPHIA; SECRETARY, L. T. ROYSTER, NORFOLK, VA.

Chairman's Address: The Opportunities of the Pediatrist in Relation to Public Health.
S. M. HAMILL, Philadelphia.

Report on Brain Cases in Children.
WILLIAM J. BUTLER, Chicago.

A Study of Children in Reference to Enteroptosis.
RICHARD R. SMITH, Grand Rapids, Mich.

Institutional Care of Young Infants.
THOMAS S. SOUTHWORTH, New York.

Influence of Summer Heat on Production of Gastro-Intestinal Diseases of Infants.
I. A. ABT, Chicago.

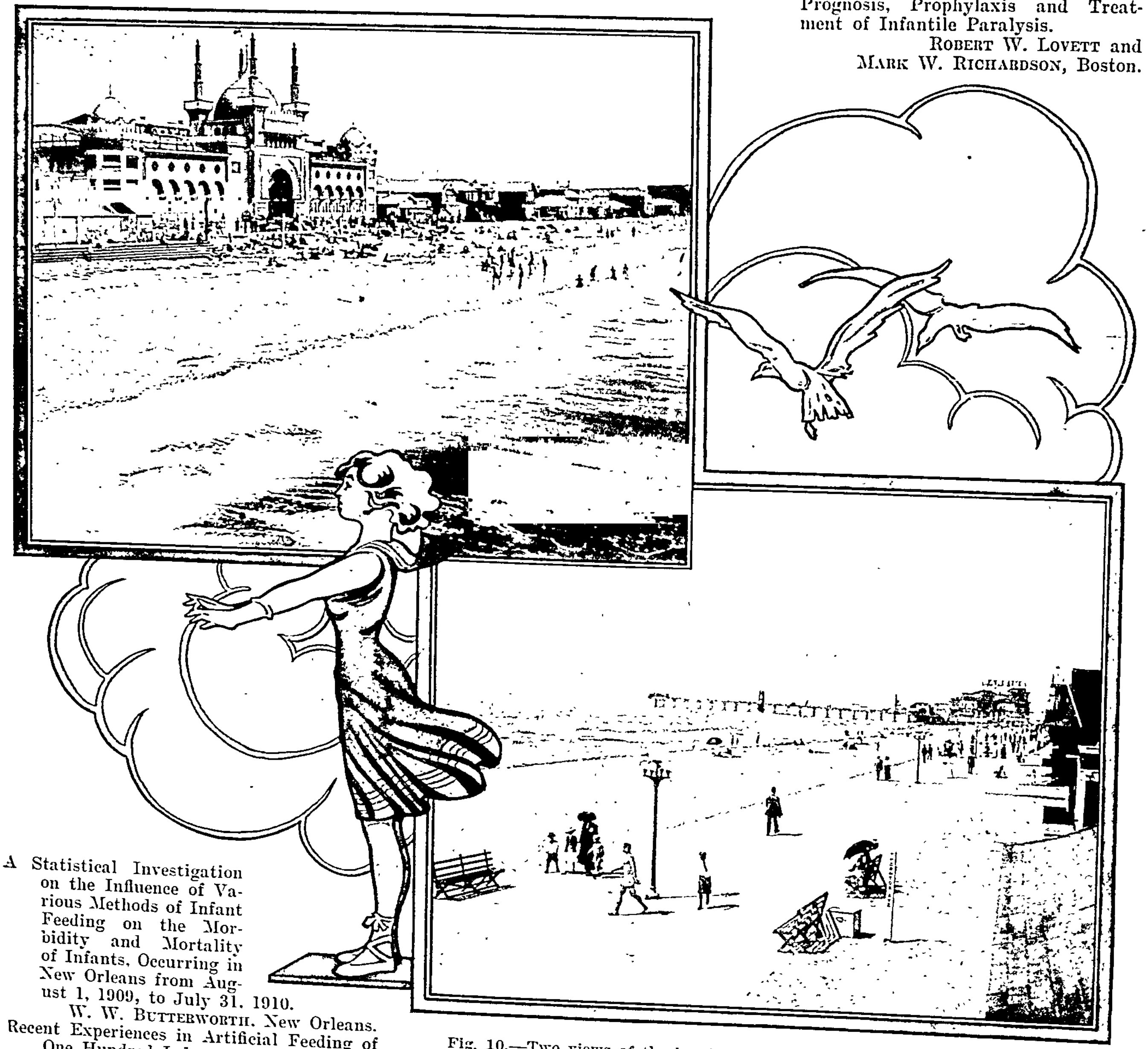


Fig. 10.—Two views of the beach at Ocean Park. Does it remind you of Atlantic City?

A Statistical Investigation on the Influence of Various Methods of Infant Feeding on the Morbidity and Mortality of Infants, Occurring in New Orleans from August 1, 1909, to July 31, 1910.
W. W. BUTTERWORTH, New Orleans.

Recent Experiences in Artificial Feeding of One Hundred Infants During the First Three Months of Life.
F. C. NEFF, Kansas City, Mo.

Relationship of Gastric to Pancreatic Fat Digestion in Infants.
J. P. SEDGWICK and F. W. SCHULTZ, Minneapolis.

The Neurotic Basis of Juvenile Delinquency, Based On Some Special Cases of the San Francisco Juvenile Court.
PHILIP KING BROWN, San Francisco.

Obstructions at the Pylorus Occurring in Infants.
LANGLEY PORTER, San Francisco.

Etiology and Treatment of Acute Nephritis in Children, With Report of Fourteen Cases.
H. M. MCCLANAHAN, Omaha, Neb.

Relation of Meat Ingestion to Indicanuria in Childhood.
E. C. FLEISCHNER, San Francisco.

Rachitis in Its Early Stages.
J. W. COKENOWER, Des Moines, Ia.

Leukemia in Childhood. W. F. CHENEY, San Francisco.

Tuberculosis of the Bronchial Glands; Symptomatology, Physical Signs and X-Ray Appearance.
HENRY FARNUM STOLL, Hartford, Conn.

Joint Session with Section on Medicine

Epidemiologic and Etiologic Studies of Acute Poliomyelitis in Pennsylvania. SAMUEL G. DIXON, Harrisburg, Pa.

Recent History and Etiology of Infantile Paralysis.
ROBERT W. LOVETT and MARK W. RICHARDSON, Boston.

Pathology, Symptomatology, Diagnosis, Prognosis, Prophylaxis and Treatment of Infantile Paralysis.
ROBERT W. LOVETT and MARK W. RICHARDSON, Boston.

Infantile Paralysis as Observed in Massachusetts, 1907-10.
ROBERT W. LOVETT and MARK W. RICHARDSON, Boston.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

CHAIRMAN, LAWRENCE LITCHFIELD, PITTSBURG, PA.; SECRETARY, M. I. WILBERT, WASHINGTON, D. C.

Chairman's Address. LAWRENCE LITCHFIELD, Pittsburg.

Address of Chairman of Delegation from American Pharmaceutical Association. ALBERT SCHNEIDER, San Francisco.

Report of the Committee on the United States Pharmacopeia, by the Chairman. REID HUNT, Washington, D. C.

Dangers of Certain Ethical Proprietary Preparations to Both Physicians and Public. M. H. Fussell, Philadelphia.

Present Status of Treatment of Hyperthyroidism by an Antithyroid Serum. Silas P. Beebe, New York.

Pharmacology of Caffein. William Salant, Washington, D. C.

Pressor Principle of Our Eastern Mistletoe.
A. C. Crawford, Stanford Univ., Cal.

Treatment of Chronic Hypertension.
L. G. Visscher, Los Angeles.

Purin Content of Common Articles of Food.
H. D. Arnold and Ralph C. Larrabee, Boston.

Uric Acid and Purin Metabolism.
A. C. Reed and Geo. B. Wallace, New York.

Fig. 11.—View of Redlands and the orange groves, with the mountains in the background.

Experiments on Relation of Thyroid to Diet.
Reid Hunt, Washington, D. C.

Symposium on Uncinariasis

Treatment of Hookworm Disease in the Individual and in the Community. Charles W. Stiles, Washington, D. C.

Relative Efficiency, as Compared with Thymol, of Certain Proposed Remedies for Hookworm Disease.
W. H. Schultz, Washington, D. C.

Hookworm Infection in the Deep Gold Mines of California.
E. E. Endicott, Jackson, Cal.

Fig. 12.—The famous eucalyptus drive.

Hookworm Disease. Herbert Gunn, San Francisco.

Prevention of Hookworm Disease in California.
William F. Snow, Sacramento, Cal.

Therapeutics of Ulcer of the Stomach.
J. R. Arneill, Denver.

Relative Value of Physical and Functional Signs in the Management of Failing Circulation.
Emile Schmoll, San Francisco.

Relation of Cardiac Irregularities to Treatment.
A. W. Hewlett, Ann Arbor, Mich.

Factors in Treatment of Myocardial Lesions.
W. W. Kerr, San Francisco.

Choice of Diuretics in Cardiac Edema.
Egbert LeFevre, New York.

Fig. 13.—Picking oranges—a pleasure to anticipate.

Effect of the Digestive Secretions on the Activity of Digitalis and Allied Drugs. Worth Hale, Washington, D. C.

Relations of the Nervous Mechanism of the Heart to Drug Effects as Indicated by Experiments on the Terrapin.
Ray Lyman Wilbur, San Francisco.

Use of the Different Salicylates in Rheumatism.
Alexander Lambert, New York.

Use of Salvarsan. J. O. Hirschfelder, San Francisco.

Further Experience with Salvarsan at the New York Skin and Cancer Hospital.
Howard Fox and William B. Trimble, New York.

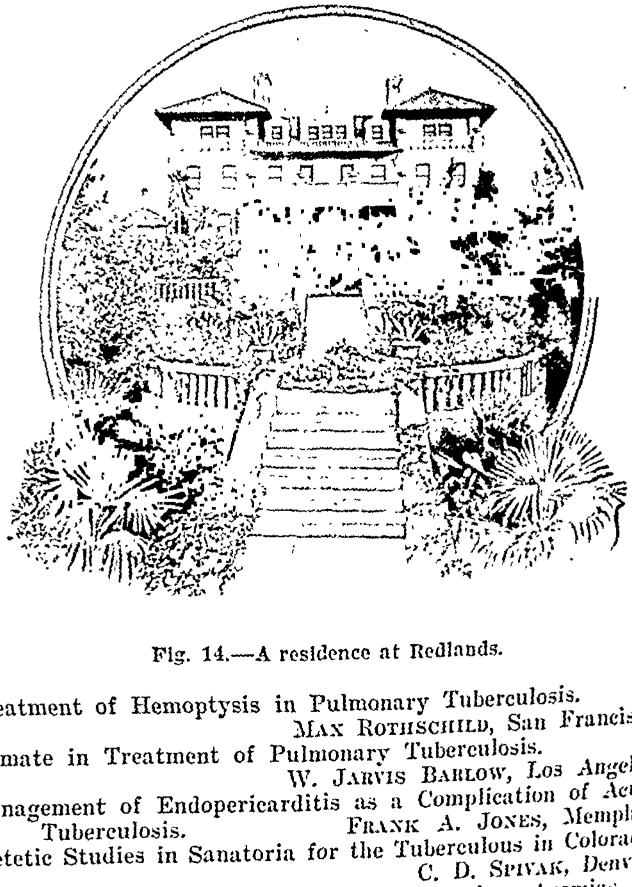


Fig. 14.—A residence at Redlands.

Treatment of Hemoptysis in Pulmonary Tuberculosis.
Max Rothschild, San Francisco.

Climate in Treatment of Pulmonary Tuberculosis.
W. Jarvis Barlow, Los Angeles.

Management of Endopericarditis as a Complication of Acute Tuberculosis. Frank A. Jones, Memphis.

Dietetic Studies in Sanatoria for the Tuberculous in Colorado.
C. D. Spivak, Denver.

Hypodermic Use of Citrate of Iron in Secondary Anemias.
E. S. Bullock and LeRoy S. Peters, Silver City, N.M.

Specific Tissue Inoculation of Vaccine.
GERALD B. WEBB and G. BURTON GILBERT, Colorado Springs, Colo.

Studies on the Treatment of Pneumonia, Typhoid Fever and Other Infections with Bacterial Vaccines.
AUGUSTUS F. SCHAFER, Bakersfield, Cal.

Report on One Hundred and Thirty Cases of Psoriasis in Private Practice on a Strictly Vegetarian Diet.
L. DUNCAN BULKLEY, New York.

The Rôle of Pharmacology and of Empiricism in the Management of Postoperative Cases.
S. T. POPE, Watsonville, Cal.

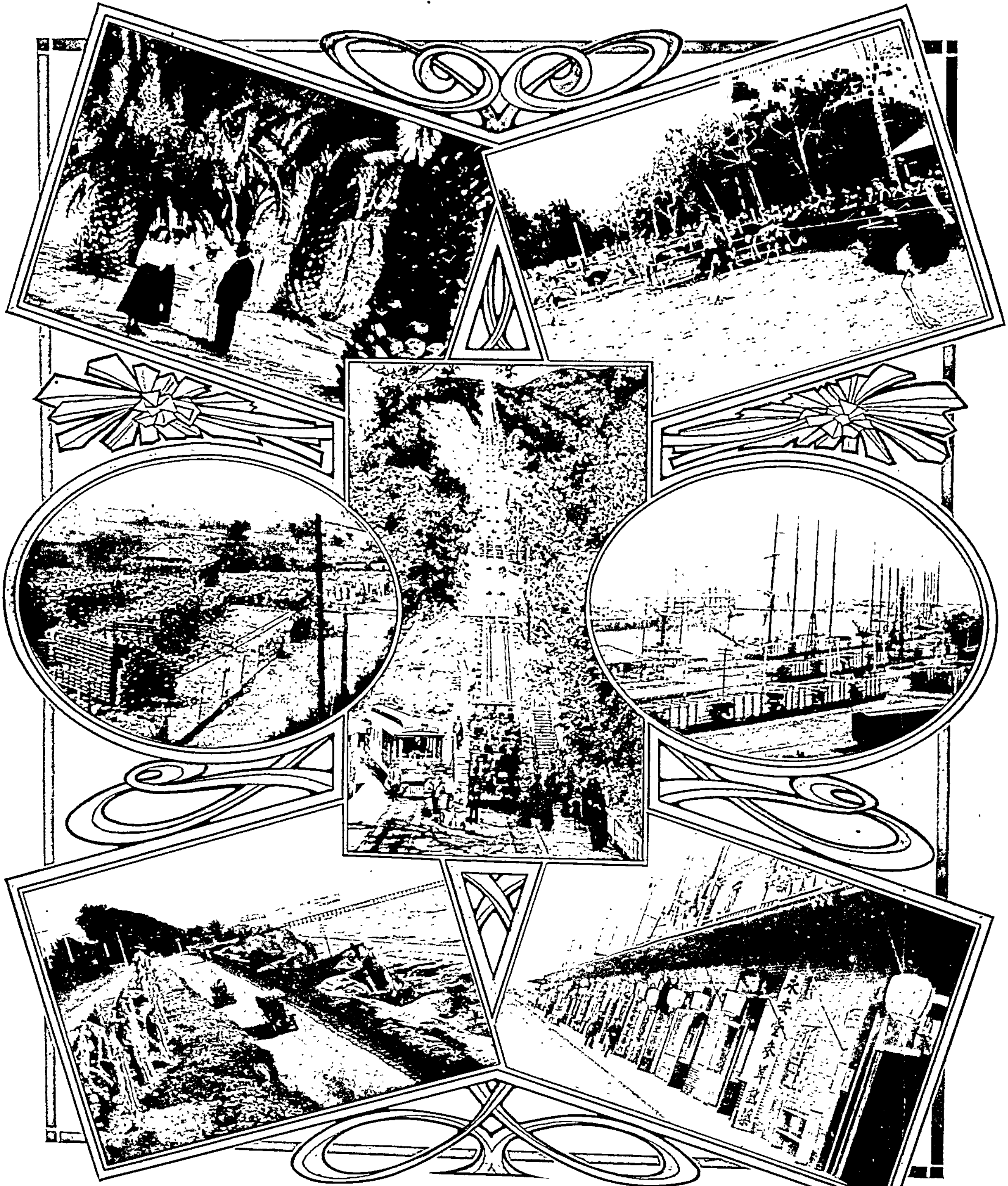


Fig. 15.—A group of views in Los Angeles and some surrounding points of interest: A view in Eastlake Park; the Cawston ostrich farm; pigeon farm in Los Angeles, 100,000 birds; the cable incline on Mount Lowe; view of the harbor and shipping at San Pedro; the cliffs at Santa Monica; street in Chinatown, Los Angeles.

Difficulties Encountered in the Therapeutic Use of Tuberculin.
F. M. POTTENGER, Monrovia, Cal.

Production of Immunity in Tuberculosis by Intravenous Injections of Tuberculin. CHARLES A. SHEPARD, Needles, Cal.

How Our Therapeutics May Be Improved.
BOARDMAN REED, Alhambra, Cal.

The Principles of Hydrotherapy in the Treatment of Diseases.
GEORGE K. ABBOTT, Loma Linda, Cal.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Chairman, Yandell Henderson, New Haven, Conn.; Secretary, Leo Loeb, St. Louis.

Chairman's Address: Clinical Physiology, an Opportunity and a Duty. Yandell Henderson, New Haven, Conn.

Streptothrix and Streptothricosis. E. J. Claypole, Los Angeles.

Relation of Specific Precipitation to the Reaction of Fixation. Frederick R. Gay, Berkeley, Cal.

Specificity. H. Gideon Wells, Chicago.

Heart-Block. J. G. Van Zwaluwenburg. Ann Arbor. Mich.

Pathology of Joint Tuberculosis, with Lantern Slide Demonstration. Leonard W. Ely, Denver.

Immunity in Tuberculosis. Its Production in Monkeys and Children. Gerald B. Webb and Wm. Whitridge Williams, assisted by Alexius M. Forster and G. Burton Gilbert, Colorado Springs, Colo.

Hypertrophy and Cancer of the Prostate. Louis B. Wilson and B. F. McGrath, Rochester Minn.

Antiformin. Frank Smithies, Ann Arbor, Mich.

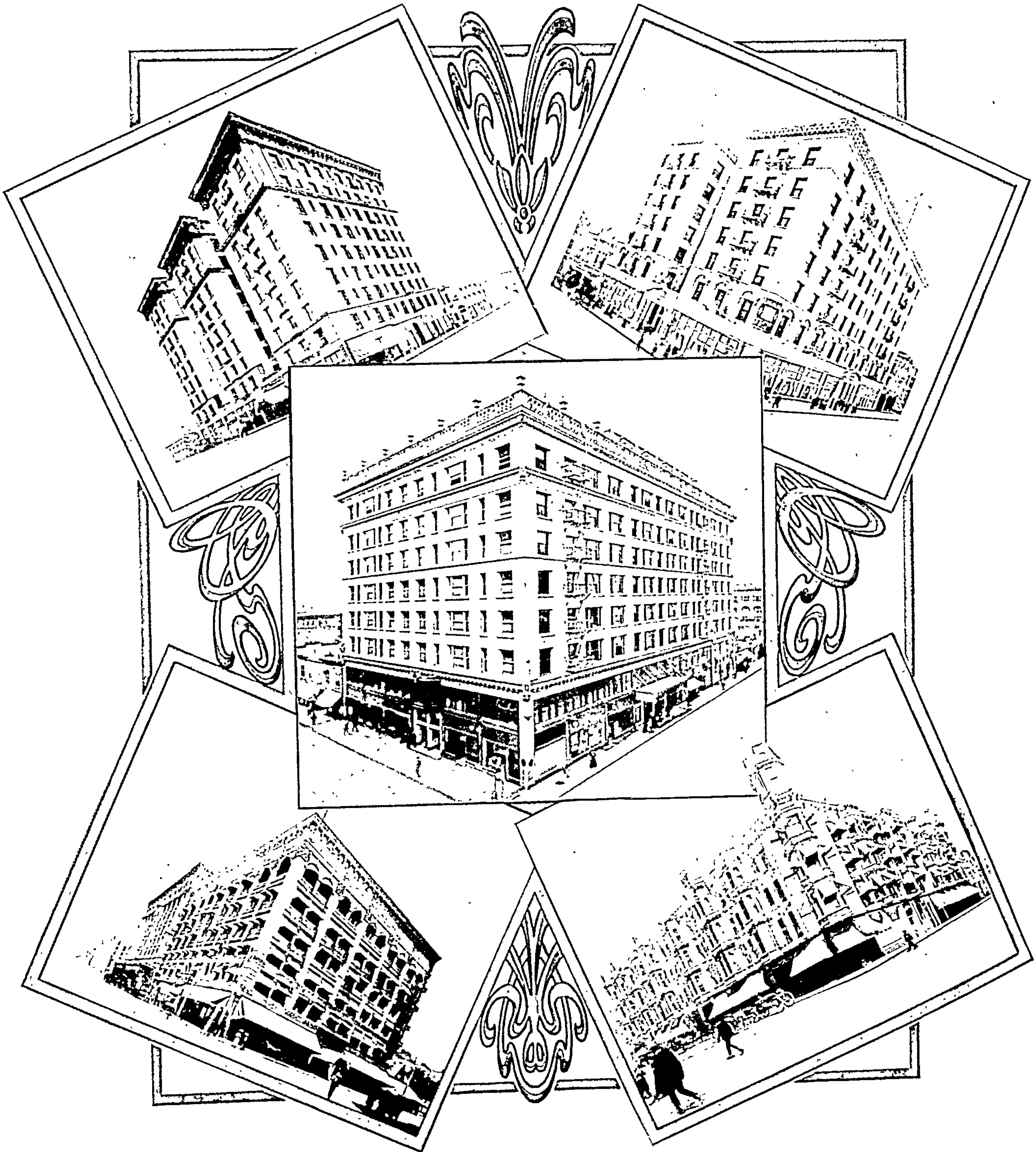


Fig. 16.—A group of headquarters hotels; in the center is the Alexandria, the general headquarters; above to the left is the Lankershim (Practice of Medicine); to the right, the Angelus (Otology and Laryngology); at the left below, the Van Nuys (Ophthalmology), and to the right, the Westminster (Diseases of Children).

Some Factors that Determine the Virulency of the Bacillus Coli Communis. Fenton B. Turck, Chicago.

A Laboratory Study of the Metabolic Products of Certain Pathogenic Bacteria. E. Mark Houghton, Detroit.

Bacteriology of the Ear. Jessie B. Hudson, Iowa City, Ia.

Photogenic Bacteria. Halden Jones, Los Angeles.

Reactions Induced by Antityphoid Vaccine. Henry Albert and A. M. Mendenhall, Iowa City Ia.

Splenic Anemias. J. F. Hultgen, Chicago.

A Case of Diffuse Cerebral Sclerosis Occurring in Infancy. Glanville Y. Rusk, Berkeley, Cal.

A Study of Experimental Bland Infarction. Howard T. Karsner and J. H. Austin, Philadelphia.

Some Urinary Findings in Eclampsia. L. B. Stockey, Los Angeles.

Influence of the Thyroid Gland on the Healing of Fractures. R. L. Thompson, St. Louis.

Subacute and Chronic Nephritis as Found in 100 Unselected Post-Mortem Examinations.
W. OPHÜLS, San Francisco.

Verruca Peruana.
SAMUEL T. DARLING, Ancon Hospital, Canal Zone.

The Pathogenesis of Balantidium Coli.
FRED B. BOWMAN, Manila. Presented by W. E. MUSGRAVE, Manila, P. I.

The Pathogenesis of Interstitial Myocarditis and Hypertrophy of the Heart.
LEO LOEB and MOYER S. FLEISCHER, St. Louis.

The Action of Drugs in Pathologic Conditions.
WILLIAM SALANT, Washington, D. C.

Bone Hyperplasia and Tumor of Bone.
E. R. LECOUNT, Chicago.

The White Cells in Tuberculosis.
W. WARNE WATKINS, Phoenix, Ariz.

The Use of Rebreathing in Administration of Anesthetics and as a Therapeutic Measure.
W. D. GATCH, Baltimore.

Wednesday night a reception in honor of the President will be given at the Shrine Auditorium. This is the most formal social function of the meeting.

Thursday night a smoker and vaudeville entertainment will be given at the Hamburger Roof Garden, Eighth and Broadway, to which everybody is invited.

Friday night there will be a midsummer night carnival at Venice and Ocean Park beaches. These beaches are reached by electric trains from the central station on Hill Street, between Fourth and Fifth.

The afternoon programs for the benefit of the ladies will include a reception and tea at the Hotel Alexandria Tuesday afternoon; an automobile trip about Los Angeles Wednesday forenoon; a garden party on the grounds of Dr. and Mrs. W. Jarvis Barlow in Los Angeles Wednesday afternoon, and Thursday afternoon an Al Fresco Musicale on the grounds of the residence of Dr. and Mrs. Norman Bridge in Los Angeles.

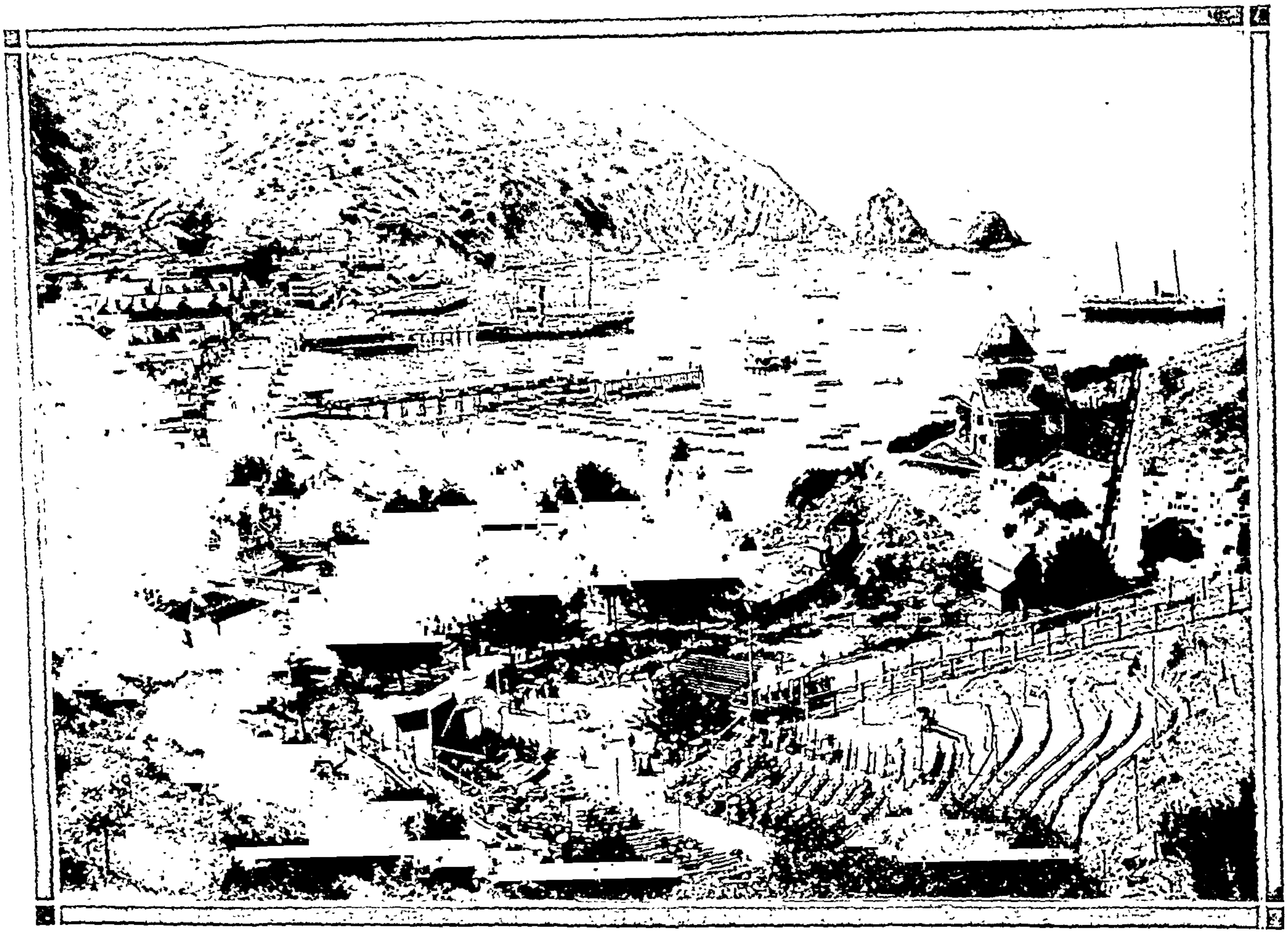


Fig. 17.—View of Avalon and the bay on Catalina Island, twenty miles from the coast of San Pedro harbor. A pleasure trip has been arranged for the members and their friends to Catalina Island. Points of interest on the island are: Sugarloaf Island; Hotel Metropole; glass-bottom boats for observing marine life on the bottom of the bay; Greek theater for band concerts; wireless station.

ENTERTAINMENTS

Social Functions and Amusements Abundantly Provided for the Los Angeles Meeting

An elaborate series of entertainments and amusements has been provided for the members and the visiting ladies during the meeting. The evening entertainments will be as follows:

On Monday night there will be banquets and smokers of several of the auxiliary societies which meet a day ahead of the American Medical Association.

Tuesday night will occur the banquets, smokers and vaudevilles of the sections and the various college classes, etc. The places and times of holding these entertainments, and further details, will be announced later, or on arrival at the meeting.

On Friday a Spanish luncheon and flower fête will be given at noon in the Sunken Gardens in Pasadena. These gardens comprise eighty acres and are acknowledged to be the most beautiful in America. Views of the gardens will be found in this issue. Following the luncheon, there will be Roman chariot races and a wild west tournament at Rose Tournament Park in Pasadena. This will be a unique entertainment. Automobiles will be provided to carry the visitors to the Sunken Gardens and to the park.

On Saturday, and on Friday also, there will be trips to Catalina, the magic island of the Pacific, with side trips in the glass bottom boats to the famous deep sea gardens. A typical Spanish barbecue will be given to the guests on both days. Another point of interest on the island is the Seal

Rocks. The fishing, which is famous at Catalina, will also attract many.

On Saturday also, there will be trolley trips to Long Beach, with luncheon at the Hotel Virginia, and a trip to Los Angeles harbor at San Pedro, with a cruise on the boats of the South Coast Yacht Club.

Other trips to surrounding resorts and cities may be made on Saturday and Sunday, or at any time during the week.

Southern California is a holiday country and there is no end of entertaining trips that may be taken through the orange groves, to the mountains or to the San Gabriel valley and the old San Gabriel Mission.

COMMITTEE ON BUREAU OF INFORMATION

Chairman, Dr. J. Y. Oldham, 214 Grant Building.

COMMITTEE ON RECEPTION AT RAILROAD STATION

Chairman, Dr. Earl Sweet, 823 Story Building.

COMMITTEE ON HOTELS AND HEADQUARTERS

Chairman, Dr. W. LeMoyne Wills, 540 Wilcox Building.

COMMITTEE ON HALLS

Chairman, Dr. John T. Ferbert, 222 Bradbury Building.

COMMITTEE ON SECTION MEETING PLACES

Chairman, Dr. Albert Soiland, 916 Wright & Callender Building.

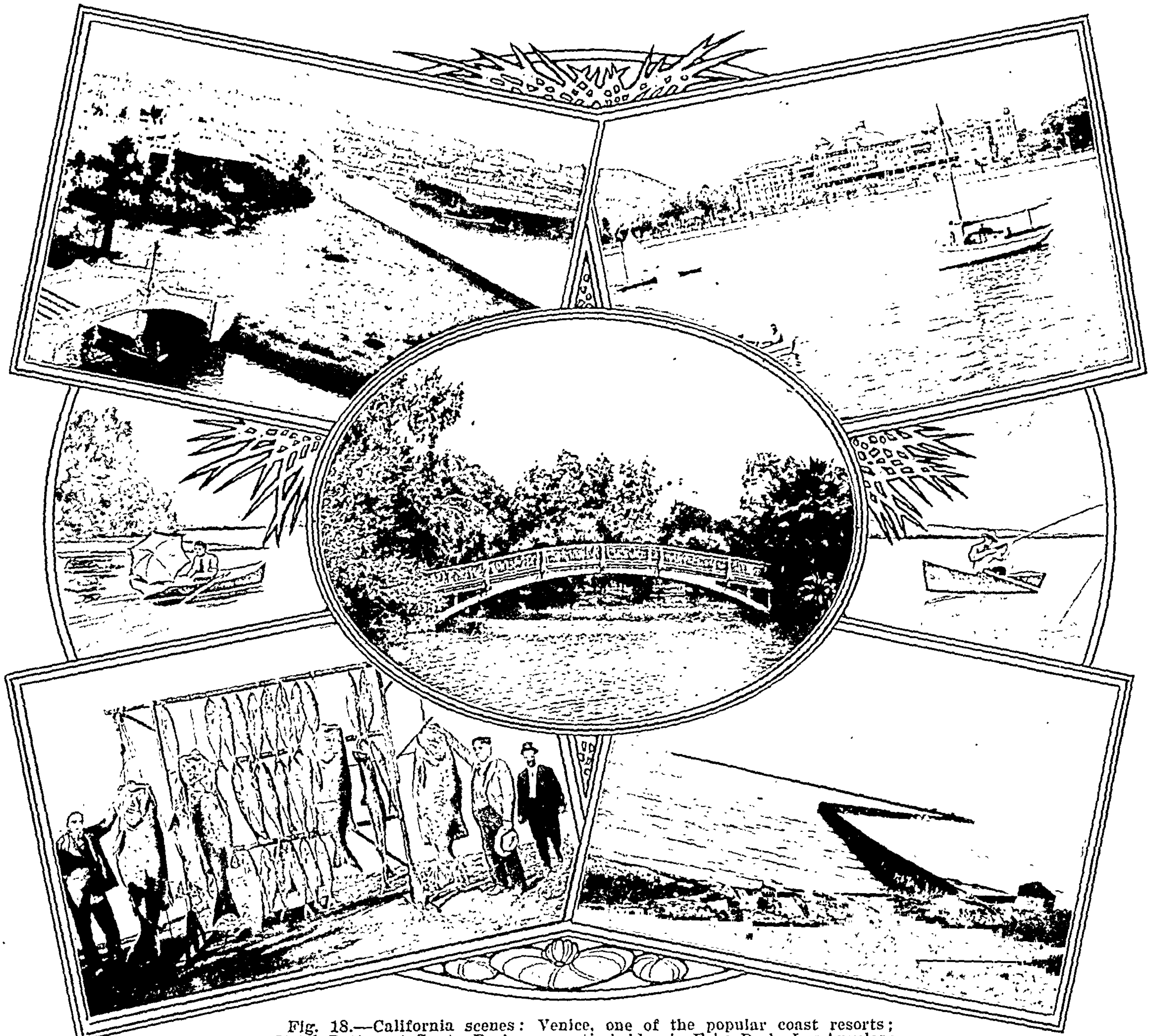


Fig. 18.—California scenes: Venice, one of the popular coast resorts; Hotel Potter at Santa Barbara; rustic bridge in Echo Park, Los Angeles; a day's catch of fish at Catallina; view of the government breakwater at San Pedro, nearly 10,000 feet in length; cost nearly $3,000,000.

COMMITTEE ON ARRANGEMENTS

The central office of the Los Angeles Committee on Arrangements is at 240 Bradbury Building, Third and Broadway, and is in charge of Dr. H. Bert. Ellis, Chairman, and Dr. George H. Kress, Secretary.

CENTRAL EXECUTIVE COMMITTEE

General Chairman, Dr. H. Bert. Ellis, 245 Bradbury Building; General Secretary, Dr. George H. Kress, 240 Bradbury Building; Treasurer, Dr. Walter Lindley; Dr. Fitch C. E. Mattison, Pasadena; Dr. W. Jarvis Barlow.

FINANCE COMMITTEE

Chairman, Dr. F. C. E. Mattison, Chamber of Commerce Building, Pasadena.

Vice-Chairman, Clarence W. Pierce.

Section on Practice of Medicine, Dr. Dudley Fulton.

Section on Surgery, Dr. E. R. Smith.

Section on Obstetrics and Diseases of Women, Dr. M. L. Moore and Carl Kurtz.

Section on Ophthalmology, Dr. T. J. McCoy.

Section on Laryngology and Otology, Dr. Hill Hastings.

Section on Nervous and Mental Diseases, Dr. H. G. Brainerd.

Section on Preventive Medicine and Public Health, Dr. L. M. Powers.

Section on Diseases of Children, Dr. Clarence Moore.

Section on Pharmacology and Therapeutics, Dr. Theodore G. Davis.

Section on Dermatology, Dr. Ralph Williams.
Section on Pathology and Physiology, Dr. John C. Colliver.
Section on Stomatology, Dr. J. Franklin Cook.

COMMITTEE ON POST-OFFICE, TELEPHONES, ETC.

Chairman, Dr. C. B. Nichols, 721 Grant Building.

COMMITTEE ON REGISTRATION

Chairman, Dr. W. W. Beckett, 213 Exchange Building.

COMMITTEE ON COMMERCIAL EXHIBIT

Chairman, Dr. W. H. Kiger, 306 Conservative Realty Building.

COMMITTEE ON PRINTING

Chairman, Dr. J. H. Seymour, 311 Grant Building.

COMMITTEE ON PROGRAM

Chairman, Dr. O. O. Witherbee, 606 Auditorium Building.

COMMITTEE ON BADGES

Chairman, Dr. F. M. Pottenger, 1202 Union Trust Building.

COMMITTEE ON NON-AFFILIATED ASSOCIATIONS

Chairman, Dr. Granville MacGowan, 602 Lissner Building.

COMMITTEE ON SMOKER ENTERTAINMENT

Chairman, Dr. Chas. W. Bryson, 402 Delta Building.

COMMITTEE ON SECTION ENTERTAINMENTS

Chairman, Dr. Andrew Stewart Lobingier, 609 H. W. Hellman Building.

COMMITTEE ON PRESIDENT'S RECEPTION

Chairman, Dr. W. Jarvis Barlow, 616 Security Building.

COMMITTEE ON PRESS AND PUBLICITY

Chairman, Dr. George H. Kress, 240 Bradbury Building.

ASSISTANT EDITOR OF THE BULLETIN

Dr. Donald J. Frick, 815 Wright & Callender Building.

COMMITTEE ON SCIENTIFIC EXHIBIT

Local Representative, Dr. Stanley P. Black, 424 Auditorium Building.

COMMITTEE ON ENTERTAINMENT OF LADIES

Mrs. Walter Lindley, 2007 South Figueroa Street.

REGISTRATION

Importance of Registering Early

The Registration Headquarters will be found in connection with the Scientific Exhibit, the Postoffice and Commercial Exhibit on the fourth floor of the Hamburger Building, at the corner of Eighth Street and Broadway, easily accessible from hotels and meeting places, or by the car lines from the depots by those who wish to go there directly.

It will be necessary to register in order to obtain the official badge and program. No one will be admitted to any entertainment without a badge. Members are urged to register as soon as they can name their hotels.

The Registration Department will be open from 8:30 a. m. to 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 26, 27, 28 and 29, and from 9 to 10 a. m. on Friday, June 30.

Attention is called to the following directions:

1. Each physician desiring to register will first fill out a registration card. One should write very plainly, or print, as the cards are given to the printer to use as "copy" for putting the names in the daily *Bulletin*.

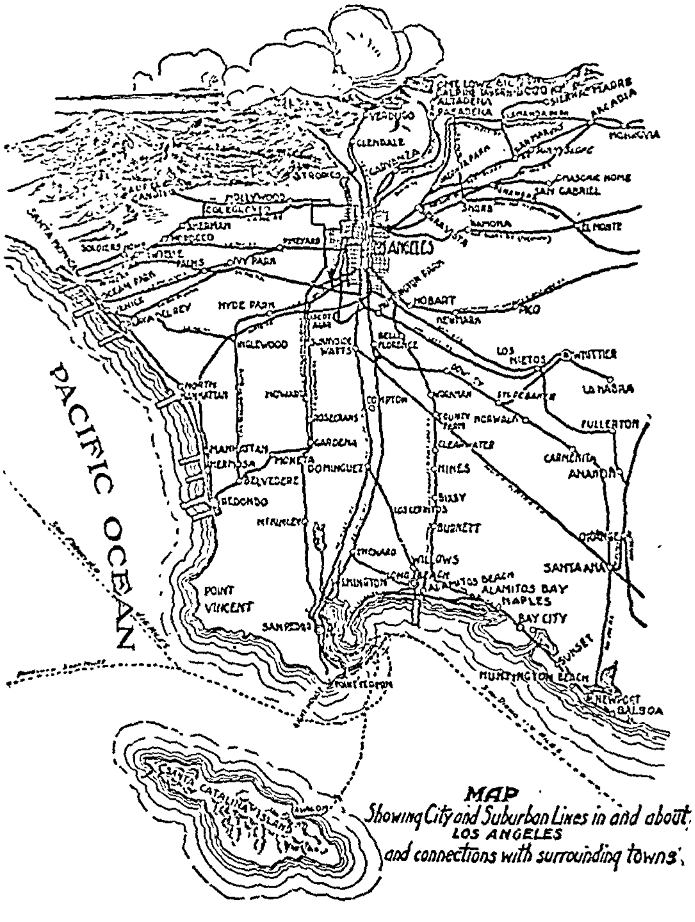
2. *Each member who has paid his annual dues* in full will present his pocket card (which was sent him from the Chicago office) and his filled-out registration card at a window marked "Registration by Pocket Card."

3. *The registration of members* who have paid their dues, but *who have failed to bring their pocket cards*, will be delayed, while the records are consulted. Hence, be sure to bring your "pocket card."

4. *Members who have not paid* their dues will present registration card and make payment at a window marked "Cash."

5. *Each applicant for membership* will present his registration card at the window marked "New Members," with a certificate of membership in his state society. Prospective members, however, will save delay and annoyance by sending in their applications before the session. All such applications should be mailed to the American Medical Association, 535 Dearborn Avenue, Chicago, so as to arrive not later than June 15.

6. Each member on registration will receive a badge, a copy of the Official Program, containing the full details of the scientific proceedings, invitations to the social functions, and such other announcements as may be necessary.



MAP
Showing City and Suburban Lines in and about LOS ANGELES and connections with surrounding towns.

INFORMATION FOR ARRIVING MEMBERS

The three transcontinental lines which come into Los Angeles are the Southern Pacific Railroad, the Santa Fe Railroad and the Salt Lake Railroad.

Arrangements will be made to have local committeemen at each of these depots. The cars which pass these depots take one to the heart of the business and hotel districts. A reference to the map in this issue showing the different streets and the locations of the hotels and meeting places will make the transfers easy.

The street cars coming from the Santa Fe and the Salt Lake railroads nearly all go south on Broadway, Spring or Main streets, so that one has simply to remember the numerical street number where one wishes to get off. The cars from the Southern Pacific run west and reach the hotel district in the neighborhood of Fourth and Fifth and Spring streets.

Those who arrive in the daytime, if they wish, can take the cars at the Santa Fe and Salt Lake stations and go direct to the Bureau of Information on the fourth floor of the Hamburger Building, which is the block bounded by Eighth, Broadway and Hill streets.

[This Los Angeles Matter is Continued on Page 1521.]

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SATURDAY, MAY 20, 1911

INTESTINAL ANAEROBES

The problem of the intestinal anaerobic bacteria, though one of enormous complexity, has been attacked by many investigators, and results both interesting and valuable have been obtained. Passini[1] in a recent article has reviewed some of these, and while space will not permit an enumeration of the various workers, their results are of such interest as to warrant their presentation here.

The meconium of the new-born child, as might be expected, is sterile. But in a few hours, depending largely on the child's environment, microorganisms appear in it, and even among these early invaders anaerobic bacteria take an important part. The gas bacillus (*B. welchii*) appears to be the most constant and important of these. With the ingestion of mother's milk the intestinal flora alters, the chief anaerobe now present being the so-called *Bacillus bifidus*, an organism closely akin to, if not identical with, the familiar Oppler-Boas bacillus. Subsequent alterations in food evoke changes in the bacteriology of the child's intestines, and it is only with the adoption of adult diet that the bacteria assume the corresponding type.

Of the various anaerobes the greatest amount of work has been devoted to the butyric-acid-forming group, of which the gas bacillus is a typical example. As with organisms of the colon group, it has been found that the different members, while fairly sharply differentiated from one another, possess intervening types that would make any precise classification a matter of difficulty. Again, as with the colon group, it has been found possible with these bacteria to demonstrate the phenomenon of group agglutination, and thus to support the idea of kinship between the various individual organisms.

The pathologic significance of the anaerobic intestinal flora offers a still comparatively unexplored field. Numerous experiments have led to the belief that bacterial invasion of the alimentary tract is in the main distinctly beneficial, and apparently it is only when certain organisms become unduly predominant, or altered nutrition affords opportunities for abnormal activity of special organisms, that direct harm results. The problems confronting the investigator in this field are of unusual difficulty, and definite etiologic relationships between specific diseases and anaerobic intestinal infections cannot be regarded as absolutely established. Several instances, however, of fairly constant association of the one with the other, are known. Thus Herter[2] has found that primary anemias of the pernicious type are ordinarily associated with predominance of *B. welchii* in the feces. And so, too, the so-called "enteric catarrh" of infancy has received much attention from this point of view. This alimentary disorder follows as a rule on an excessive sugar diet. In the normal infant, sugar digestion and absorption are practically complete before the lower small intestine is reached; but with large amounts of sugar in the diet, this is no longer the case, and an abnormal medium is provided for the anaerobes inhabiting this part of the alimentary tract. Now it has been found that with special media—essentially albuminous material subjected to tryptic digestion, with subsequent addition of sugar—the gas bacillus is capable of producing a substance violently poisonous, in suitable, though small, doses to laboratory animals. It produces rapid death by paralysis of the respiratory center when given intravenously; and when it is injected into the intestines of dogs, violent peristalsis ensues, with temporary recovery and late death from a hemorrhagic inflammation of the intestinal mucosa. When this substance is applied locally to smooth muscle, tetanic contractions of long duration result. It is, of course, unsafe to ascribe to the action of this poison the human clinical picture. But in favor of this view are the following facts: First, in the stools of enteric catarrh the prevailing organism appears to be the gas bacillus; second, the disease occurs, for the most part at least, in cases of excessive sugar-feeding; third, elimination of sugar from the diet, along with improvement in the patient, is accompanied by a change in the intestinal flora, the spore-free sugar-fermenting type of the gas bacillus giving place to the sporing form, typical of growth in sugar-free media; and fourth, on one occasion at least it has been possible to obtain the characteristic poison by alcoholic extraction of the stools in this disease. The poison thus possibly at the bottom of enteric catarrh is apparently not a toxin in the bacteriologic sense. It is relatively very stable to heat and preservation; it can be extracted with alcohol; and attempts to obtain an antitoxin have been unsuccessful. In its formation, the presence of both sugar and the products of tryptic digestion appear to be essential. Whether or not this toxic substance is identical with the butyric acid produced by the organism, cannot be regarded as absolutely settled. McCampbell[3] obtained as poisonous an effect from solutions of butyric acid of strength equivalent to that of the bacterial cultures as from the filtered cultures themselves; but Passini states that neutralization or even alkalinity of his special medium has no effect on the toxicity.

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[1] Passini: Jahrb. f. Kinderh., 1911, lxxiii, 284.

[2] Herter: Jour. Biol. Chem., 1906, ii, 1.

[3] McCampbell: Jour. Infect. Dis., 1909, vi, 537.

It is unfortunate that the connection between the results of the laboratory and the clinical pictures is in part at least conjectural. The necessity for further work is of course obvious; but the results hitherto obtained, though not in themselves conclusive, are of such a nature as to invite the investigation that must lead toward ultimate solution of the problems presented.

EUROPE IN ADVANCE OF US—A TRIBUTE TO HERMANN KNAPP

The recent death of Dr. Hermann Knapp has occasioned a reflection not complimentary to the American people. Before he began his American career he had studied in several European universities, and had established a dispensary and hospital for eye diseases which is now a part of the University of Heidelberg, at which he taught four years. The science and the art of ophthalmology in this country were indeed a puny pair of twins until 1868, when Knapp brought us the ophthalmoscope which his teacher, von Helmholtz, had invented seventeen years before, and which von Graefe—of whom Knapp was also a student—had applied to eye diseases. Thus, Knapp's advent among us initiated the special work in orbital practice by which such beneficent results are now every day in evidence.

Soon after he established himself in New York, Dr. Knapp founded the New York Ophthalmological and Aural Institute, where under him many of the foremost workers in eye diseases in this country received their early training. Himself an extensive producer of papers, treatises and text-books, he began those *Archives of Ophthalmology and Otology* which are to-day an imposing monument to his zeal for the dissemination of the best literature in this special field. The span of his life was eight decades; and from his youth almost to his death, he gave to humankind the best of his heart and mind and strength; night and day he worked, sustained by a most inspiring enthusiasm for his calling and for humanity, until several years ago his health quite gave way; the prosperous and the penniless received alike his equal ministrations.

Now, outside his profession, the American people, whom he served with such self-abnegation, have permitted the occasion of his death to pass practically unnoticed; the representative lay press has given his career not nearly as much space as would be devoted to that of a pugilist or a second-rate politician. True, there was that in Dr. Knapp's fine temperament which lent itself to effacement; he shrank ever from ostentation. It was sought repeatedly to give dinners in his honor, to celebrate his anniversaries; on his retirement from the faculty of the College of Physicians and Surgeons the students wanted to commemorate his services; but he would have none of that. For his seventieth birthday a like celebration was planned; but he kept out of the way until the day and the occasion had passed. Loving-cups, engrossed resolutions and the like are indubitably good in their way; but they were not in Dr. Knapp's way.

Now to the point: had Dr. Knapp died in Germany or in France, his beneficent life and labors would have been the themes of grateful and nation-wide eulogy. For example, in Paris, Berthelot was laid in state in the Pantheon, a great assembly giving its presence, the president of the republic, the diplomatic corps, members of the French Academy, judges, deputies, senators, deputations from many societies, taking part; the French Minister of Education related impressively the dead chemist's achievements; the whole Parisian garrison defiled before the catafalque; on that day every school in France was closed.

The honor paid the memory of Pasteur is another instance: There was several years ago a *plébiscite* to determine who were the ten greatest Frenchmen of the nineteenth century; 15,000,000 votes were cast. Who was first? Napoleon? No. Victor Hugo? No. Pasteur headed the list; among the ten were Curie and Roux; Ampère came eleventh; and Arago, the physicist, was fifteenth.

Virchow's funeral was most impressive, in that the whole German people took part. Von Bergman died in Berlin; but on his seventieth birthday (without waiting to bestow posthumous honors, and while he was still in the plenitude of his powers), his fellow-countrymen, both professional and lay, gave him the fullest meed of respect and affection; about forty delegations, bringing gifts of all kinds, consumed nearly five hours in passing before him. The imperial government, and the great seats of learning were represented; men notable in the arts, in music and the drama, and in other lofty pursuits paid tribute to his sympathetic appreciation of professions other than his own; four important works were prepared and published in commemoration of this great birthday.

Thus do they honor science and the humanities on the Continent. We, it would seem, have still considerable progress to make before we reach a like stage in civilization.

THE WISCONSIN PURE FOOD LAW NOT EMASCULATED

Twice before we have called attention to the fact that the people of Wisconsin are not willing to allow the "interests" to dictate to them the terms of their pure food law. When the federal Food and Drugs Act went into effect the "glucose trust" protested against Dr. Wiley's ruling that the company must label its product "glucose," insisting that it should be permitted to use the more euphemistic term, "corn syrup." Its protest was heeded, Dr. Wiley was overruled, and the first breach in the federal Food and Drugs Act was made. The Wisconsin pure food law also requires that the manufacturer tell the truth on his labels and the officers that enforce this law have insisted that glucose should be called glucose. In this case, also, a protest was made by the trust, but Wisconsin was not so easily cajoled as was Washington. Finding its protest of no avail the "glucose trust" declared a boycott against the state and refused to ship its product into Wisconsin and, what was of still greater moment, it practically ceased advertising in the newspapers of Wisconsin. But the fact that, previous to the boycott, Wisconsin had purchased thousands of pounds of glucose and was therefore a profitable market, caused the makers of this substance to bring to bear all the pressure they could to change the Wisconsin law.

During the early days of the present session of the Wisconsin legislature two bills were introduced by Mr. Perry and Mr. Stevenson, respectively, each having for its purpose the legalizing of the term "corn syrup" as a synonym for glucose. One of these, the Stevenson bill, was withdrawn from the committee and from the assembly, but there was a public hearing on the other. The Perry bill was reported back to the assembly for passage. When the measure came up in the assembly for action on the report of the committee, the bill was killed by the vote of 68 to 22.

This result is cheering to all who believe that pure food laws should be passed and enforced in the interest of the public rather than in the interest of manufacturers. As we have said before, Wisconsin is to be congratulated not only on having an enlightened legislature and a supreme court that interprets the law in the public's interest, but also on having virile and fearless officials who enforce the law without fear or favor.

It now remains to be seen whether the boycott, which the manufacturers of glucose declared, but which was raised during the time that the present legislature was in session, will again be declared against Wisconsin. If a few more states could be prevailed on to insist on the same degree of honesty on the part of manufacturers that Wisconsin requires, it would be but a short time before the Corn Products Refining Company would be only too pleased to label its products "glucose" in accordance with the facts. In the present more or less chaotic condition in the various state food laws, one unfortunate feature is the unfair commercial advantage that a state having loosely liberal laws has over those states which try to protect their citizens by making stringent laws and enforcing them strictly. If competition in the manufacture of glucose were commercially practicable, a boycott on the part of the glucose trust would not be of any great moment, as men of capital would undoubtedly recognize the commercial possibilities of manufacturing glucose within the boycotted state and selling it under its true name. Unfortunately, competition against a practical monopoly, said to be backed by the Standard Oil interests, is probably not commercially practicable.

Against the use of glucose, *per se,* as a food product. we know of no great objection. It is a very inexpensive substitute for real syrup and undoubtedly has a definite food value. Of course, practically all the flavor possessed by the so-called corn syrup preparations, is due to the admixture of cane or some other real syrup with the glucose; for in its pure state glucose is insipid and but very slightly sweet. The fraud on the public consists in selling glucose under the name "corn syrup," for it is not a syrup in the sense understood by the public, namely, the concentrated sap of a sugar-producing plant. The makers of glucose have argued that the word "glucose" is in such ill repute that people will not purchase it under its own name. If this is true, it is all the more reason why the public should not be deceived into purchasing, under a euphemistic name, a substance that they otherwise would not have.

The Corn Products Refining Company, popularly known as the "glucose trust," would have exhibited greater foresightedness and more long-headed business sense if, instead of lobbying against certain features of the Wisconsin Pure Food Law, it had spent the same amount of money on a campaign of education by which the public might learn the harmlessness and food value of glucose. We sometimes wonder how long it will be before all manufacturers that have wholesome products will be willing to sell them honestly and on their merits instead of attempting to build up an artificial demand for them by means of falsehood and political chicanery.

THE USE OF ORANGE-RED UNDERCLOTHING IN THE TROPICS

The theory of Woodruff, that the deterioration of the white man in the tropics is due more to the actinic rays of the sun than to exposure to excessive heat, has found many adherents. With the view of ascertaining the truth or falsity of this hypothesis, the experiments conducted in the Philippines by the Medical Corps of the Army were continued for over a year, and the results are embodied in the last annual report of the Surgeon-General of the Army.[1]

Orange-red underclothing and hat-linings were chosen on account of the known resistance of this color to the actinic rays of the sun. The tests were carried out by making comparisons between 500 soldiers equipped with these garments and 500 controls using white, care being taken to choose the two sets of men from the same companies and to divide them in such a way as to make the two groups as nearly as possible equal in physique. The exceptionally weak and those having had long tropical experience were excluded.

A comparison of the sick reports showed insignificant differences between the two groups, except that there was a higher admission rate for heat exhaustion among those wearing the orange-red underclothing than among the controls. Those wearing orange-red suffered more from perspiration than those wearing white, and extensive experiments, both on and off the body, showed that exposure to the sun caused a greater temperature beneath the colored garments than beneath similar white material. The fall in blood-pressure, as well as the increase in red blood-cells and diminution in percentage of hemoglobin which the unacclimated suffer in the tropics, was more apparent among the wearers of the orange-red than among the controls. The former also showed a tendency to lose weight more rapidly than the latter. Fifteen hundred observations showed temperature, pulse and respiration to be slightly higher for the orange-red group than for the controls. The impressions of the individual wearers were, on the whole, decidedly adverse to the colored underwear. There were only sixteen men who preferred it to the white. Fifty-four expressed no choice, but the remainder, constituting nearly four hundred men, expressed their disapproval. The consensus of opinion seemed to be that it was more uncomfortable, the discomfort being, in the main, attributed to the excessive perspiration which it caused. It is significant that no organization commander saw any benefit from its use, and that of sixteen officers who gave it a personal trial there was only one who expressed approval.

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[1] Report of the Surgeon-General, U. S. Army, 1910, page 118; experiments carried out at certain Philippine posts by Major Collins and First Lieutenants McKenney, Phillips and Cowles.

The medical officers who conducted the experiments reached the general conclusion that the test underclothing was of no material value, but that, on the contrary, it increased the burden of heat which the system was compelled to endure. They are of the opinion that the sun's rays alone are not responsible for the physiologic effects of the climate in the Philippines, and that, even if the actinic rays have any influence at all on the system, the campaign hat and the khaki uniform constitute a sufficient protection against them.

Current Comment

THE PROBLEM OF PURE MILK

In a recent issue[1] we commented briefly on the report of the Philadelphia Milk Commission. At that time the full report was not at hand. It has since been printed, however, and is available for study by those interested in clean, healthful milk, and that should include every citizen, be he health officer or other public official, or private individual. The report may be heartily recommended for study, too, as it covers one of the most searching investigations of this important problem yet published, and sets forth a complete scheme of regulations for the production, transportation, handling and delivery of milk to the consumer, proposes a plan of reorganization of the division of milk inspection of the health department, and reports on chemical and bacteriologic standards. The commission says that the problem of the safeguarding of milk-supplies for municipalities is too large and too serious to be considered solely from the point of view of the effect that regulation might have on the commercial interests involved, which has been the point of view generally adopted hitherto. Bad milk is one of the great factors in the production of the enormous death-rate of infants under one year of age. It also figures largely in the propagation of typhoid fever, diphtheria, scarlet fever and tuberculosis. The regulation of milk production, transportation and subsequent handling, therefore, becomes one of our most serious problems. The investigations of the commission in many instances revealed wretched conditions in all the stages of the milk business from the producer to the consumer; the members say that to permit the continuation of the milk business under existing conditions could only contribute to the mortality of the community. The most valuable feature of the report is not that it exposes and condemns conditions in Philadelphia particularly, but that its findings and its comprehensive plan for remedying them might be applied with but little modification to almost any other city. The report is a valuable municipal text-book on the milk question.

MAKING ROOM FOR CITY PARKS

The growth of many cities in the United States has been so rapid that proper provision has not been made for adequate public parks and breathing-places for the people. Recent agitation for more parks and playgrounds, and for the general sanitation and hygiene of cities, has resulted in the making of parks at enormous expense in the midst of thickly populated districts. In New York City the necessity for further parks and also for greater dockage facilities in the harbor has culminated in a scheme for the creation of a park in the air, so to speak. At the present time nearly the whole of the west side of Manhattan Island is occupied by the New York Central Railroad tracks, and a plan has been devised whereby a space 200 feet wide and several miles long will be converted into additional space for railroads and docks by filling in along the water-front. It is proposed[1] to cover over this entire space by heavy steel and concrete roofing and then to fill in this roof with soil and make a water-front park. Most cities having water-fronts have allowed these naturally advantageous locations for parks to be absorbed by railroads or other industrial enterprises. Chicago, with its wonderful water-front on Lake Michigan, has allowed this to happen, to a certain extent. The plan of New York, though an expensive one, seems to be entirely feasible; at least, it has been so pronounced by engineers. Certainly it would form a most attractive addition to the park system of that city.

FREE DISPENSARIES FOR HOOKWORM DISEASE

The idea of the free dispensary as a factor in suppressing hookworm infection originated in Mississippi, where the first institution of this kind was organized at Columbia, Marion County, in December, 1910, and is now running a full capacity of 300 patients monthly. The Columbia Dispensary is supported by public and private cooperation, the county health officer having given the use of a four-room building for twelve months, the necessary drugs being supplied by the county board of supervisors, while the beds and other hospital appointments are furnished by the Columbia County Club, and the linen by the women's clubs of the city. A trained nurse has been installed to take care of the dispensary and its patients and people are now coming in for examination and treatment from a radius of over twenty miles. Resting as well as ambulant patients are treated and applications for beds are now sent in well in advance. The Mississippi idea has already begun to take root in other southern states. In Alabama, for instance, there are four dispensaries in Geneva County, five in Dale County, three in Coffee County and two at Houston. Very significant are the results already obtained at the "free clinics" in Coffee County, which are hardly a month old. A circular distributed through the county in March announced that free clinics for hookworm patients would be held at Elba, Brockton and Enterprise at stated intervals. Up to April 14, the total number of patients treated at the three clinics was 1,416, and on one day (April 8) as many as 439 patients applied for treatment at Enterprise alone. In addition, two local county newspapers have engaged to mail 1,000 copies each of a folding circular on sanitary privies to their subscribers. We congratulate the public health authorities of these southern states on the important sanitary work they are doing and hope their example will stimulate other states to similar efforts in the same direction.

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[1] March 11, 1911, p. 749

[1] Plan of Park Commissioner Stover and Dock Commissioner Tomkins; described in Scient. Am., May 6, 1911, p. 446.

PERSECUTION OF DR. KANTOR, THE FOE OF QUACKERY

We have frequently had occasion to commend the organ of the German Antiquackery Society, the *Gesundheitslehrer,* published by Dr. Kantor of Warnsdorf, Bohemia. Dr. Kantor has often been sued for damages by persons and firms injured by his propaganda for reform and exposures of fraudulent proprietaries, and he still has a number of suits on hand. An anonymous pamphlet calumniating his personal and professional character has recently been scattered broadcast. As the slandered physician has no means of legal redress against the authors or instigators of this attack, he has sent to the medical press a reply denouncing the pamphlet as a collection of falsehoods and perversions of fact intended to discredit him, both professionally and as the publisher of the *Gesundheitslehrer.* He adds that, notwithstanding the numerous suits that have been brought against him, no one has succeeded in producing any evidence of dishonorable conduct on his part, either private or professional, and that moneyed interests are bringing every means to bear in order to down him, or to disgust him with his difficult struggle against quackery. His sturdy little monthly costs only seventy-five cents a year and contains a fund of information, written in popular German, on nostrums and different phases of the practice of medicine by unqualified persons. It is to be hoped that Dr. Kantor will receive still more of the support of the German medical profession and of the intelligent lay public in his campaign against the nostrum evil. For a private individual to oppose single-handed the powerful interests involved requires courage and determination of a high order, since the attempt would appear hopeless to an ordinary character. We in America may congratulate ourselves at least on the fact that the organized medical profession has taken a firm stand on the subject, in which it has been sustained by the more progressive portion of the lay press.

Medical News

ARKANSAS

State Medical Society Meeting.—The thirty-fifth annual meeting of the Arkansas Medical Society was held in Fort Smith, May 2-5, under the presidency of Dr. Robinson C. Dorr, Batesville. Hot Springs was selected as the place of meeting for 1912, and the following officers were elected: president, Dr. Morgan Smith, Little Rock; vice-presidents, Drs. James B. Roe, Calico Rock; William W. York, Ashdown, and John W. Webster, Siloam Springs; secretary, Dr. Clinton P. Meriwether, Little Rock; treasurer, Dr. John S. Wood, Hot Springs; delegate to the American Medical Association, Dr. Gus A. Warren, Black Rock; alternate, Dr. John W. Webster, Siloam Springs, and councilors, first district, Dr. Hughey, Knoble; second district, Dr. James H. Kennerly, Batesville; third district, Dr. Tillman B. Bradford, Cotton Plant; fourth district, Dr. Arthur D. Knott, Wilmot; fifth district, Dr. Robert A. Hilton, El Dorado; sixth district, Dr. Leonce J. Kosminsky, Texarkana; seventh district, Dr. Reuben Phillips, Malvern; eighth district, Dr. A. H. McKenzie, Dardanelle; ninth district, Dr. Frank B. Kirby, Harrison, and tenth district, Dr. Matt S. Dibrell, Van Buren.

CALIFORNIA

Builds Sanatorium.—Dr. G. Richard Hickok, Gardnerville, Nev., is about to establish a tuberculosis sanatorium at Badger, 35 miles northeast of Visalia, and has purchased 880 acres as a site.

Illegal Practitioner Sentenced.—Mrs. Salvatrice Mingilino, San Francisco, arrested at the instance of the State Board of Medical Examiners, is said to have been found guilty of practicing medicine without a license and to have been fined $100, with the alternative of fifty days imprisonment in the county jail.

Personal.—Dr. Charles F. Whitmer, Oakland, fell from a tree, May 2, fracturing his left leg.——Dr. Stanley P. Black has been appointed city health inspector of Pasadena.——Dr. William R. Dorr, warden of the City and County Hospital, San Francisco, has resigned.——Dr. George B. Walrath, Los Angeles, while attempting to board a rapidly moving car at Venice was thrown to the ground, fracturing several ribs.——Dr. Edgar W. Clark, Los Angeles, is reported to be seriously ill at his home.——Dr. Charles C. Browning, Monrovia, while in attendance at a meeting of the State Board of Health at Santa Barbara, had an attack of acute appendicitis and was taken to the Good Samaritan Hospital, Los Angeles, where an operation was performed April 20.

Tuberculosis Bill Passed.—Assembly Bill No. 821, introduced by Assemblyman Bliss at the instance of the Alameda Society for the Study and Prevention of Tuberculosis, was passed by the legislature and signed by the governor. The purpose of the new law, which carries with it an appropriation of $5,000, is set forth in the first two sections of the bill, which read as follows:

> Section 1.—It shall be the duty of the State Board of Health to cause special investigation of the prevalence of tuberculosis in California and the effects of localities, employments, conditions and circumstances on the health of those developing the disease, and to determine the best means for its eradication.
>
> Sec. 2.—The State Board of Health shall publish or procure and distribute free to the people of the state of California printed matter, charts, pictures or models, or demonstrate to them in any practical way the prevalence of tuberculosis, the danger of infection therefrom and the means of prevention.

COLORADO

Asks Wards for Drug Addicts.—Dr. Elizabeth Cassidy recommended to the Board of County Commissioners of Denver County that wards at the county jail be set aside for users of cocain, morphin, opium and other drugs, and that the older addicts be segregated from the beginners.

Grants Petition.—District Judge Allen has granted the petition of Dr. Elizabeth Cassidy, Denver, a member of the Board of County Commissioners, to have the proceedings of the board for several months investigated by the district court. Dr. Cassidy's advocation contends that the board is wasting at least $30,000 annually, and that claims are not carefully investigated before payment.

Personal.—Dr. Elizabeth C. Cassidy, Denver, has been appointed a member of the State Board of Charities and Corrections.——Dr. Paul S. Hunter, Denver, has been appointed secretary of the State Board of Health.——Drs. W. W. Flora, Colorado Springs, and George Sullivan, Victor, have been made members of the Board of Dental Examiners, and Dr. Charles

S. Morrison, Colorado City, has been appointed a member of the Lunacy Commission.——Dr. Edgar D. Heaton, Centerville, Ia., was thrown from his bicycle, April 27, fracturing his right arm below the elbow.——Dr. Sherman Williams, Denver, has been appointed a member of the State Board of Health, vice Dr. Minnie C. T. Love.

ILLINOIS

State Board Prosecution.—L. C. Crump, indicted on charges by the State Board of Health for the illegal practice of medicine, was tried before a jury in the municipal court, Chicago, and fined $100 and costs. The defendant is said to have issued a card setting forth that he is a man of God and a divine healer. He is said to have examined each of those who applied to him, prayed with him, given him a big bottle of medicine and charged $1.

Personal.—Dr. Joseph C. Myers, Clinton, who has been ill in Decatur, has returned home.——Dr. and Mrs. Martin Van Buren Montgomery, Opdyke, celebrated their golden wedding anniversary, May 6.——Dr. Frank L. Hall, Jacksonville, has retired from the practice of medicine.——Dr. Benamjin P. Marsh, Bloomington, is reported to be ill with neurasthenia. ——Dr. Henry J. Gahagan has been named as city physician of Elgin.——Dr. Charles G. Beard, Sterling, has been appointed district surgeon for the Northwestern System, vice Dr. Frank Anthony, Sterling, deceased.

Society Meetings.—At the annual meeting of the Brainard District Medical Society, held in joint session with the Logan County Medical Society at Lincoln, April 27, the following officers were elected: President, Dr. Edwin P. Sloan, Bloomington; vice-presidents, Drs. Charles W. Carter, Clinton; Charles B. Caldwell, Lincoln, and Robert A. Noble, Bloomington; secretary, Dr. Harry S. Oyler, Lincoln; treasurer, Dr. Charles C. Reed, Lincoln, and censor, Dr. Athens L. Brittin, Atlanta.——DeKalb County Medical Association, at its annual meeting held in Sycamore, April 28, elected Dr. Charles H. Mordoff, Genoa, president; Dr. John B. Nesbitt, Sycamore, vice-president, and Dr. Stoddard L. Anderson, DeKalb, secretary and treasurer.——The Elgin Physicians' Club; at its annual meeting, May 1, elected Dr. George J. Schneider, president; Dr. Edward H. Abbott, vice-president; Dr. Jane Trull, secretary and treasurer, and Dr. Charles E. Sisson, a member of the executive board.——La Salle County Medical Society, at its annual meeting held in Ottawa, April 25, elected Dr. Everett H. Butterfield, Ottawa, president; Dr. Milton E. Blanchard, Marseilles, vice-president; Dr. Albert J. Roberts, Ottawa, secretary and treasurer; Dr. George A. Discus, Streator, censor; Dr. William O. Ensign, Rutland, delegate to the state society, and Dr. William Schoenneshofer, Lostant, alternate.

Chicago

Sanatorium Site Chosen.—The Paul Lawrence Dunbar Sanatorium for Colored Tuberculosis Patients will be established on a tract of land nine acres in extent, lying between Washington Heights and Morgan Park.

Playground Established at Hospital.—A playground for the exclusive use of convalescent children has been established by St. Luke's Hospital on a lot 50 feet by 163, adjoining the institution, which has been purchased and will be fenced in and equipped with outdoor gymnastic apparatus.

Suburban Hospital.—Thirty-five physicians of Oak Park, Austin, Elmhurst and Melrose Park met at the Oak Park Club, May 15, and organized the Suburban Hospital Association. The following officers were elected: President, Dr. Charles E. Humiston, Austin; vice-president, Dr. Charles W. Poorman, Oak Park; secretary, Dr. Fred W. Kettlestrings, Oak Park, and treasurer, Dr. Thomas E. Motter, Oak Park. Drs. Humiston, Poorman and William G. Willard were appointed members of the site committee.

Personal.—Dr. Henry J. Pieper, of the University of Chicago, has been appointed assistant professor of physiology in Columbia University.——Dr. and Mrs. Eugene S. Talbot and daughter sailed for Europe, May 20.——Dr. Fenton B. Turck gave a reception to the class of 1891 of Northwestern University Medical School at his house, May 6.——Dr. John B. Murphy is reported convalescent after an attack of typhoid fever. ——Dr. Walter B. Schwuchow has moved to Los Angeles, Cal. ——Dr. Samuel W. Forney has moved from Chicago to Boise, Ida.

INDIANA

Alumni to Meet.—The Alumni Association of the Indiana University School of Medicine will hold its annual meeting at Indianapolis, May 29. In the evening a banquet will be given at the Columbia Club.

Fly Catechism.—Dr. Charles S. Woods of the City Sanatorium of Indianapolis distributed 30,000 leaflets to the school children of that city on the care of the teeth and also a fly catechism dealing with the province of the ills due to the house fly.

Handling of Foodstuffs.—At a special meeting of the State Board of Health, three rules were added to the regulations for the handling of foodstuffs. The first provides that hotels and restaurants shall be classified as cold storage plants, except when the storage is less than thirty days. The other two rules refer to the handling of dairy products in unsanitary dairies or manufactories, and provide that it becomes a violation of the law for milk, butter, cheese or other milk products to be offered for sale when the product is from an establishment that has been condemned by the board.

Personal.—Dr. Mary E. Jackson, Hammond, who was operated on at the Mary Thompson Hospital, Chicago, for the removal of gall-stones, has returned to her home, convalescent. ——Dr. Stanley W. Edwins, Elwood, has retired after fifty-five years of practice.——Dr. Orange G. Pfaff, Indianapolis, who has been ill for several weeks from septicemia is convalescent and has gone to Atlantic City.——Dr. Fairfield Snyder, Corunna, has been declared of unsound mind and application has been made for his admission to the Longcliffe Hospital. ——Dr. James Trelor Tresidder, Tipton, has gone to Indianapolis for operation.

State Board Prosecutions.—Dr. Rudolph C. Tilley, who is said to have taken two examinations before the State Board but failed to obtain the proper certificates, was arrested on the charge of practicing medicine without a license at Lawrenceburg and fined $25.00 and costs.——At a meeting of the State Board of Medical Registration and Examination, May 11, the license of Dr. William McKinstray, South Bend, is said to have been revoked on an affidavit filed by Dr. Alexander P. Forbes Gammack, and afterward verified, which stated that Dr. McKinstray had purchased his diploma from the National Medical University of Chicago.

MARYLAND

Officers Hold Over.—Under an amendment to the constitution adopted at the late meeting of the Medical and Chirurgical Faculty of Maryland, the new officers will not assume their duties until Jan. 1, 1912, the officers of 1910 holding over until that time.

Personal.—Dr. Henry W. McComas has been elected secretary of the Board of Health of Garrett County and physician to the County Jail, vice Dr. John C. Legge.——Dr. Charles M. Ellis, Elkton, is reported to be critically ill at Johns Hopkins Hospital, following a surgical operation.

Baltimore

Personal.—Dr. Harry Friedenwald sails for Europe, May 13.——Dr. George A. Strauss, Jr., who was operated on at Mercy Hospital, May 7, is reported to be convalescent.——Dr. Marcus S. Dillon has been appointed medical supervisor of the Franklin Square Hospital of the Maryland Medical School, vice Dr. James A. Duff.

Endows Hospital and Industrial School.—James L. Kernan has placed on record deeds of trust whereby the net dividends from 3,400 shares of the capital stock of the James L. Kernan Company will be applied, at his death, to the James Lawrence Kernan Hospital and Industrial School for Crippled Children founded by him at Radnor Park.

Dispensary Election.—At the annual meeting of the board of directors of the Baltimore Eastern Dispensary, held May 8, Dr. Daniel W. Cathell was elected president, Drs. George F. Hancock and Frank C. Bressler were elected directors, and Dr. Robert S. Kirk was reelected superintendent for the twelfth year. During the year just ended, 25,840 patients were given treatment at the institution.

Will Ask Enabling Act.—The Municipal Tuberculosis Commission will ask the next legislature for an enabling act to allow Baltimore to float a loan to provide for a hospital to accommodate three hundred tuberculosis patients. Baltimore is said to have been the first city to inaugurate a systematic fight against tuberculosis. Mrs. William Osler raised a fund and paid a nurse to investigate cases throughout the city and to instruct those afflicted as to their care. The Maryland Association for the Prevention and Relief of Tuberculosis then came into existence and took up the work, employing four nurses. A few years later the work became so heavy that the city was called on to take charge and provided fifteen public nurses, and it is believed that next year twenty-five nurses will be needed.

MASSACHUSETTS

Personal.—Drs. John L. Ames and Arthur B. Coffin, Boston, have resigned as school physicians.——Dr. Patrick H. Mullowney has been appointed a member of the Boston Board of Health.

Physicians to Aid Foreigners.—At the recent missionary jubilee in Boston, a number of women physicians organized the Medical Women's Association for Aiding Women in Medical Work in Foreign Countries; and elected the following officers: president, Dr. Frances M. Morris; vice-presidents, Drs. Helen I. Woodworth and Edith Hale Swift; secretary, Dr. Blanche A. Denig, and treasurer, Dr. Mary R. Mulliner, all of Boston. The object of the association is to raise money to endow already existing medical institutions for women in foreign countries; to provide scholarships for native women in medical schools; to take a personal interest in women medical students who are studying to enter the foreign field, and to provide equipment and hospital facilities as far as possible.

District Society Elections.—At the annual meeting of Essex North District Medical Society, held in Lawrence, May 3, the following officers were elected: president, Dr. Warren W. Pillsbury, Newburyport; vice-president, Dr. William H. Merrill, Lawrence; secretary-treasurer, Dr. J. Forrest Burnham, Lawrence; commissioner of trials, Dr. John F. Croston, Haverhill; nominating councilor, Dr. Israel J. Clarke, Haverhill; alternate, Dr. Charles G. Carleton, Lawrence; supervising censor, Dr. Frank B. Pierce, Haverhill; censors, Drs. Robert M. Birmingham, Lawrence; John A. Magee, Lawrence, John A. FitzHugh, Amesbury, and Thomas R. Healy, Newburyport, and councilors, Drs. Charles G. Carleton, Lawrence, Israel J. Clarke, Haverhill, John A. Douglass, Amesbury, Ernest H. Noyes, Newburyport, Frank B. Pierce, Haverhill, Frank W. Snow, Newburyport, Frederick E. Sweetsir, Merrimac, and J. Forrest Burnham, Lawrence.——At the annual meeting of Berkshire District Medical Society, held in Pittsfield, April 27, the following officers were elected: President, Dr. Clifford S. Chapin, Great Barrington; vice-president, Dr. Isaac S. F. Dodd, Pittsfield, and treasurer, Dr. Joseph D. Howe, Pittsfield. ——At the annual meeting of the Springfield Academy of Medicine, Prof. John M. Tyler, Amherst, gave an address on biology. The following officers were elected: president, Dr. Philip Kilroy; vice-presidents, Drs. Ralph H. Seelye and J. B. Cummings; secretary, Dr. Alexander C. Eastman; treasurer, Dr. John M. Birnie, all of Springfield, and censor, Dr. J. Clark Hubbard, Holyoke.

MICHIGAN

Pays for Registration of Births.—The state has begun the payment of approximately $36,000 to Detroit physicians for registration of births during 1910.

Antituberculosis Work.—At the first regular meeting of the Saginaw Antituberculosis Society, held May 3, Dr. George L. Alger, Saginaw, was elected president, and it was planned to launch an extensive campaign with lectures, literature and personal effort.——An antituberculosis league has been started in Adrian. A committee was appointed on constitution and by-laws on which Dr. Eli T. Morden was made chairman.

Personal.—Dr. Edwin Goodwin has been appointed health officer of Bay City.——Dr. Ross U. Adams, Kalamazoo, who has been in the Borgess Hospital with septicemia, due to an operation wound, is reported to be much improved.——Dr. Clarke B. Fulkerson has been reappointed city bacteriologist of Kalamazoo.——Dr. Jos. B. Griswold, Grand Rapids, has been appointed a member of the Board of Control of the Soldiers' Home in that city.——Dr. William A. Wilson, Detroit, has been reelected national president of the Federation of Florence Crittenton Leagues.

Alumni Week at Detroit.—Alumni week will be celebrated by the Detroit College of Medicine with a series of clinics extending from May 17 to May 25, inclusive. The special features of the week are clinics by Drs. Albert J. Ochsner, Chicago, on "General Surgery;" Jesse S. Myer, St. Louis, on "Cardiospasm;" Emilius C. Dudley, Chicago, on "Gynecology;" George W. Crile, Cleveland, O., on "Surgery;" Jay F. Schamberg, Philadelphia, on "Dermatology;" Charles S. Williamson, Chicago, on "Heart Disease;" Edward L. Keyes, Jr., New York, on "Genito-Urinary Diseases," and William T. Henderson, Mobile, Ala., on "Local Anesthesia in Hernia." On May 19 the alumni will be given a lunch at the Ford Motor factory and in the afternoon will inspect the Walker-Gordon farm near and in the afternoon will inspect the Walker-Gordon farm near Birmingham. On May 23 there will be a boat ride to the St. Clair flats, following an inspection of the research laboratory of Parke, Davis and Company; and on May 25 there will be a luncheon at Harmonie Hall, followed by the annual meeting of the association.

MISSOURI

Hospital Cornerstone Laid.—The cornerstone of the new German Hospital at Kansas City was laid with formal ceremonies, April 30. The building is to cost $150,000 and marks the completion of a quarter of a century's existence of the institution.

Changes in State Institutions.—Dr. Robert Scott Magee, Green City, assistant superintendent of the State Hospital, No. 3, Fulton, has been appointed acting superintendent of the State Hospital, No. 4, Farmington, vice Dr. Robert E. Keaney, Farmington, resigned.——Dr. Porter E. Williams, Clarksburg, with two other members of the State Board of Charities, has been detailed to go to Farmington and make an investigation of the system and methods there in vogue.——Drs. Henry Lloyd and Frank S. Weber, assistants at the State Hospital, No. 4, Farmington, have resigned.

Society Proceedings.—Carroll County Medical Society was reorganized at Carrolton, April 24, and the following officers were elected: president, Dr. Richard F. Cook; vice-presidents. Drs. William C. Baird, Bogard, and Strong. Norborne; secretary and treasurer, Dr. H. Jackson Harrell, St. Louis; delegate to the state association, Dr. Edward H. Musson, Norborne, and alternate, Dr. Rezin C. Shawhan.——At the annual meeting of the Linton District Medical Society, held in Mexico, May 2, the following officers were elected: president, Dr. Robert C. Strode, Mexico; vice-presidents, Drs. August W. Kampschmidt, Columbia, and Frank J. Tainter, St. Charles; secretary, Dr. R. T. Gibbs, Mexico, and treasurer, Dr. Ned R. Rodes, Mexico.

St. Louis

Inebriates' Home.—The St. Louis Society of Medical Research inaugurated a movement at its meeting, May 7, for a state home for inebriates, to cost $100,000. The plan is to establish a colony to which inebriates may be committed for indeterminate sentences.

Personal.—Dr. Henry S. Atkins, superintendent of the municipal sanatorium, has resigned.——Dr. Edward L. Cooley has returned from abroad.——Dr. Max Starkloff, newly appointed health commissioner, has been appointed registrar of vital statistics.

Hospital Board Needs More Money.—The hospital board has asked the municipal assembly to appropriate $200,000 in addition to the appropriation of $700,000 already made, for its uses. This amount is to go toward the maintenance of the City Hospital, the sanatorium, infirmary, Robert Koch Hospital and the city dispensaries.

Research Society Organized.—The St. Louis Society of Research in Tuberculosis was organized April 20. The object of the society is to stimulate research in problems connected both with medical and surgical tuberculosis. Dr. William Porter was elected president, Dr. Louis C. Boisliniere, vice-president, and Dr. Ross Hopkins, secretary.

NEBRASKA

County Society Meeting.—Sherman County Medical Society, at its annual meeting held in Loup City, May 2, elected Dr. Mary A. K. Hendrickson, president; Dr. Archibald J. Kearns, Loup City, vice-president, and Dr. Anton E. Wanek, Ashton, secretary and treasurer.

Rush Alumni of Nebraska Hold Meeting.—The annual meeting of the Rush Alumni Association of Nebraska was held in Omaha, April 30. Dr. John M. Dodson, dean of the college, was the guest of honor and delivered an address on the "History of Rush Medical College." Dr. Frank E. Coulter, Omaha, was elected president, and Dr. Rodney Bliss, Omaha, secretary of the society.

State Association Meeting.—The forty-third annual meeting of the Nebraska State Medical Association was held in Omaha, May 2-4, and the following officers were elected: president, Dr. Andrew D. Nesbitt, Tekamah; vice-presidents, Drs. N. T. Johnston, Upland, and Voorhees Lucas, North Platte; secretary, Dr. Alonzo D. Wilkinson, Lincoln (reelected); treasurer, Dr. Alexander S. Von Mansfelde, Ashland (reelected); chairman of the board of councilors, Dr. Harvey H. Bellwood, Alliance, and delegate to the American Medical Association, Dr. A. R. Mitchell, Lincoln.

College News.—The Nebraska legislature has passed a bill, which has been signed by the governor, appropriating $100,000 with which to begin the development of the campus of the College of Medicine of the State University in Omaha. This is the first step toward the development of a complete medical college plant.——Fire in the elevator shaft of Creighton College, May 8, caused a loss of more than $60,000. The chief damage was caused to the laboratories of the institution.——The commencement exercises of Creighton University were held, April 29, and a class of forty-three was graduated from the medical department.——At the annual meeting of the Creighton Alumni Association, April 27, Dr. Gustav Hahn, Omaha, was elected president, and Dr. Rudolph Rix, Omaha, secretary and treasurer (reelected for the twelfth successive term).

NEW JERSEY

Health Board Reorganizes.—The State Board of Health met for reorganization in Trenton, May 9. J. H. Capstich, Montville, was elected president, and Bruce S. Keater, Asbury Park, was reelected secretary.

Personal.—Dr. Edmund L. B. Godfrey, Camden, has been appointed Surgeon General of the National Guard of New Jersey, with the rank of brigadier general.——Dr. Edward A. Ayers has been appointed president of the Board of Health of Newton.——Dr. David B. Ackley, Trenton, is reported to be ill with septicemia as result of an operation wound of the hand.

Society Meetings.—The Middlesex Medical Society held its annual meeting in New Brunswick, April 20, and elected Dr. John L. Lund, Perth Amboy, president; Dr. Howard Crosby Vorhees, New Brunswick, vice-president; Dr. Martin Stoetzel Meinzer, Perth Amboy, secretary; Dr. David Combs English, New Brunswick, treasurer, and delegates to the state society, Drs. William E. Ramsay and John L. MacDowell, Perth Amboy.——At the annual meeting of the Hudson County Medical Society, held in Hoboken, Dr. George Myrtle Culver was elected president; Dr. Frank F. Bowyer, vice-president; Dr. Charles H. Finke, Jersey City, secretary; Dr. Henry H. Brinkerhoff, treasurer, and Dr. Joseph Abraham Koppell, reporter.——At the annual meeting of the Passaic County Medical Society, held in Paterson, April 11, the following officers were elected: Dr. William S. Flitcroft, president; Dr. Robert Morison Curts, vice-president; Dr. Joseph Allen Maclay, secretary (reelected); Dr. William Wallace MacAlister, treasurer; Dr. Thomas Arthur Clay, reporter; Dr. Charles H. Scribner, censor; Drs. Edgar Carroll Dayton and Joseph V. Bergin, permanent delegates, and Drs. Benjamin H. Rogers, James H. Curts, Frank Joseph Keller, James Alexander Browne, Thomas A. Dingman and Orville Reed Hagen, annual delegates.

NEW YORK

County Society Meeting.—The annual meeting of the Schuyler Medical Society was held in Watkins, May 9, and the following officers were elected: President, Dr. John M. Quirk, Montour Falls; vice-president, Dr. Arthur H. Jackson, Odessa; secretary, Dr. John M. Swan, Watkins, and treasurer, Dr. Delivan W. Scutt, Watkins.

Vetoes Site for City Hospital.—Mayor Furhman has vetoed the West Farm site for the proposed Buffalo General Hospital. This site had been agreed on by all concerned as favorable and contains 81 acres, whereas the site favored by the mayor is the one on which the present Erie County Hospital is located and comprises only 47½ acres.

New Buildings Needed for Sanatorium.—Mountain Sanatorium, Binghamton, is in further need of a building in which patients in advanced stages of tuberculosis, or moribund, may be cared for. The building proposed will be about 24 feet square, with male and female wards, and a room adjoining for the use of the nurse in charge of the building.

New York City

Gift to Columbia.—Columbia University has received an anonymous gift of $10,000 annually for four years, to be used in surgical research.

Personal.—Dr. Winford H. Smith sailed for Europe, May 25. He will assume charge of his duties as superintendent of Johns Hopkins Hospital about the middle of August.——Dr. Edwin H. Fiske, Brooklyn, has been appointed a police surgeon, vice Dr. Charles H. Terry, retired.

NORTH CAROLINA

Personal.—Dr. Francis O. Rogers, Concord, is about to remove to Galveston, Tex.——Dr. Baxter B. Hunter, Kings Mountain, has returned from New York City and is about to reenter practice in Charlotte.——Drs. J. Howell Way, Waynesville, and William O. Spencer, Winston, have been recommissioned members of the State Board of Health for six years.

To Have County Superintendent of Health.—The commissioners of Gilford have decided to elect a county superintendent of health at a salary of $2,500 per annum, requiring the individual so elected to devote his entire time to the care of the inmates of the various county institutions and the instruction of the children in the schools throughout the county in hygienic living.

The Hookworm Campaign.—The campaign against hookworm in the state continues active. Last week Dr. Platt W. Covington, Rockingham, was added to the field force which now includes four traveling physicians under the direction of Dr. John A. Ferrall, assistant secretary for hookworm of the State Board of Health. Six microscopists in the Laboratory of Hygiene at Raleigh are devoting their entire time to the investigation of specimens sent in.

NORTH DAKOTA

Physicians of State Hold Meeting.—The North Dakota State Medical Association held its twenty-fourth annual meeting in Fargo, May 9-11, and elected the following officers: president, Dr. Clinton E. Spicer, Litchville; vice-presidents, Drs. Alexander J. McCannell, Minot; Murdock MacGregor, Fargo, and R. Hudson Beek, Lakota; secretary, Dr. Hezekiah J. Rowe, Casselton (reelected); treasurer, Dr. Frank J. King, St. Thomas (reelected); councilors, Drs. Francis R. Smyth, Bismarck; Henry M. Wheeler, Grand Forks, and Andrew Clark; delegate to the American Medical Association, Dr. Victor H. Stickney, Dickinson, and alternate, Dr. Henry H. Healy, Grand Forks. Valley City was selected as the place of meeting for 1912.

OHIO

Cleveland Personal.—Dr. James D. Pilcher, who was recently operated on for appendicitis, is reported to be making good progress toward recovery.——Dr. Henry J. Gerstenberger has been appointed a member of the Cleveland Milk Commission, vice Dr. Edward F. Cushing, deceased.——Dr. George N. Upson was recently operated on for hernia and adhesions, following appendectomy.

State Association Meeting.—The sixty-sixth annual meeting of the Ohio State Medical Association was held in Cleveland, May 9-11, the Cleveland Academy of Medicine acting as host. The annual address on surgery was delivered by Dr. J. Chalmers Da Costa, Philadelphia, and it was decided to hold the next annual meeting in Dayton. The following officers were elected: president, Dr. Horace Bonner, Dayton; vice-presidents, Drs. Charles B. Parker, Cleveland; John C. Larkin, Hillsboro; George W. Hixson, Cambridge, and Sidney D. Foster, Toledo; councilors, Drs. Dana O. Weeks, Marion, and William E. Wright, Newark; secretary, Dr. John H. J. Upham, Columbus, and treasurer, Dr. Joseph A. Duncan, Toledo. A report of the scientific proceedings will appear in The Journal.

OKLAHOMA

Health Officers Meet.—The Oklahoma State Health Association, at its annual meeting in Muskogee, May 10, elected Dr. W. E. Wright, Tulsa, president; Dr. William G. Blake, Tahlequah, vice-president, and Dr. Joseph C. Ambrister, Chickasha, secretary-treasurer.

Woman's Auxiliary Meeting.—The Woman's Auxiliary of the Oklahoma State Medical Association, at its meeting in Muskogee, May 11, elected Mrs. W. C. Mitchiner, Okmulgee, president; Mrs. David A. Myers, Lawton, and Mrs. Walter B. Reeves, Wapanucka, vice-presidents; Mrs. Patrick H. Mayginnes, Tulsa, secretary and Mrs. John F. Duckworth, Tahlequah, treasurer.

Personal.—Captain Hugh Scott, M.C., N.G. Oklahoma, Waukamis, has been detailed to attend the army maneuvers at San Antonio.——Fire in the Westfall building, Oklahoma City, did great damage to the offices of Drs. Everett E. Phillips and Arthur L. Edington.——Dr. William Ernest Floyd, Coweta, has been appointed physician of Wagner County.

New Medical Examining Board.—The State Board of Medical Examiners held its meeting for organization in Oklahoma City, April 12, and elected Dr. Francis B. Fite, Muskogee, president; Dr. R. Ellis Sawyer, Durant, vice-president; Dr. John W. Duke, Guthrie, secretary, and Dr. F. A. Englehart, Oklahoma City, treasurer.——Dr. Jesse L. Wharton, Duncan, has been appointed a member of the State Board of Medical Examiners, vice Dr. D. C. F. Stillwell, Piedmont.

State Society Election.—At the nineteenth annual meeting of the Oklahoma State Medical Association, held in Muskogee, May 9-11, the following officers were elected: president, Dr. Charles L. Reeder, Tulsa; vice-presidents, Drs. James L. Shuler, Durant; H. Marion Williams, Wellston, and John W. Duke, Guthrie; secretary-treasurer, Dr. Claude A. Thompson, Muskogee (reelected), and chairman of the department on the eye, ear, nose and throat, Dr. W. Albert Cook, Tulsa. Shawnee was selected as the next place of meeting.

PENNSYLVANIA

Personal.—Dr. Oscar Kniffler, Pittsburg, has decided to move to Wiesbaden, Germany, on account of the health of his wife. ——Dr. George G. Harman, Huntingdon, who was operated on for appendicitis in the German Hospital, Philadelphia, March 22, has fully recovered.

Mount Alto Sanatorium.—According to State Health Commissioner Dixon, centralization of the state's tuberculosis work at Mount Alto, Cresson and Hamburg has not only great economic advantage, but also secures much better conditions for the patients under which to make the fight for health. At Mount Alto 800 patients are now being treated and the capacity will soon be raised to 1,200. One central heating plant serves for the entire village, and in the camp for incipient cases, there is a comfortably large sunshiny cottage for every eight patients, two in a room.

Touring Lecturer to be Employed.—At a meeting of the board of directors of the Pennsylvania Society for the Prevention of Tuberculosis, held May 9, it was decided to employ a lecturer to tour the state addressing the school children and teachers on the methods of preventing tuberculosis. Town meetings will be held by him and he will organize a corps of instructors to carry on the work. Plans were also formulated for an organized agitation to obtain county hospitals for advanced cases. Conferences will be arranged with the various county poor boards and a vigorous campaign started in all parts of the state.

Philadelphia

Hospital Building Dedicated.—A large addition to the Mt. Sinai Hospital was dedicated May 6, with elaborate ceremonies. A number of addresses were made and an interesting feature of the program was the sale of the golden keys (of the main door, vestibule, dispensary, various wards, private rooms and clinics) by auction, the twenty keys bringing in a total sum of $3,160.

Personal.—Dr. Warfield T. Longcope has been appointed assistant professor of medicine in Columbia University.—— The vacancy created in the editorship of the *American Journal of the Medical Sciences* by the death of Dr. Aloysius O. J. Kelly has been filled by the acceptance of the position by Dr. George Morris Piersol.——Dr. Herbert P. Leopold sailed for Europe, May 13.——Drs. George G. Ross and Albert D. Whiting have been appointed instructors in surgery at the Medical School of the University of Pennsylvania.——Dr. William M. Sweet has been appointed attending surgeon to the Wills Eye Hospital. to fill the vacancy caused by the death of Dr. Charles A. Oliver.

Urges Use of Byberry.—The Council's committee on health and charities, which made a tour of inspection of insane asylums in other cities, in its report to Councils on May 4, recommended the immediate erection of a hospital for insane at Byberry; the overcrowded condition of the present quarters and the fact that the city is paying for the maintenance of 1,930 patients in other institutions were given as reasons for prompt action. It was suggested that Councils make an appropriation for a temporary building at Byberry to house 400 of the able-bodied insane male patients, who should be put to work preparing the ground for new buildings; that the new institution be built in a semi-detached system, all buildings to be connected by corridors and tunnels; that the institution be equipped with common dining rooms, except in the infirmaries and wards for feeble and unclean cases, kitchen building, laundry, workshops, convalescent building, infirmaries, attendants' homes, recreation buildings, auditorium, chapels, power plant, surgical operating room and a morgue.

TENNESSEE

College Commencement.—The thirty-fifth annual commencement of Meharry Medical College, Nashville, was held April 25. The address to the graduating classes was delivered by Rev. C. T. Walker, Augusta, Ga. This was followed by an address from Governor Hooper. A class of fifty-five was graduated from the medical department.

Society Condemns Hospital Superintendent.—The Memphis and Shelby County Medical Society, at its meeting May 2, went on record as condemning Alvin F. Tate, superintendent of the City Hospital "on account of his personal unfitness, his discourteous treatment to members of the medical profession and his discourtesies to the interns and nurses."

TEXAS

State Association Election.—At the forty-third annual meeting of the State Medical Association of Texas, held in Amarillo, May 9-11, the following officers were elected: president, Dr. David R. Fly, Amarillo; vice-presidents, Drs. Wiley H. Freeman, Lockney; A. L. Lincecum, El Campo, and Joe H. McCracken, Mineral Wells; trustee, Dr. John T. Moore, Houston; councilors, Drs. Hugh D. Barnes, Tulia; Washington A. Harper, Austin; William H. Blythe, Mount Pleasant; Walter Shropshire, Yoakum; Wallace Ralston, Houston, and Newton J. Phenix, Colorado (reelected); delegates to the American Medical Association, Drs. Arthur C. Scott, Temple; Vard H. Hulen, Houston; William L. Brown, El Paso, and Joe Becton, Greenville, and alternates, Drs. Frank D. Boyd, Fort Worth; Charles A. Smith, Texarkana, and James C. Loggins, Ennis. Waco was selected as the next place of meeting. Resolutions were adopted setting forth the necessity for the state to promptly provide adequate room and treatment of the insane of the state so as to avoid the necessity for confinement of insane persons in jails at any time, and providing for a state commission on insanity and substituting diagnosis by the commission for trial by jury.

WISCONSIN

District Society Meeting.—At the annual meeting of the 9th Councilor District Medical Society, held in Stevens Point, May 2, Dr. Thos. H. Hay, Stevens Point, was elected president, and Dr. Potter, Marshfield, secretary and treasurer.

Higher Death-Rate.—The Wisconsin State Board of Health, in its quarterly report on vital statistics, says that the mortality rate during the first quarter of 1911 was 13.7 per 1,000 of population, an increase of 1.5 per 1,000 as compared with a similar period of last year; and that this was due chiefly to the prevalence of pneumonia.

Personal.—Dr. John A. Roberts, Portage, was operated on at the Bentley Hospital, May 7, and is reported to be doing well.——Captain James Scott, M. C. N. G. Wis., Appleton, has been ordered to attend the maneuvers at San Antonio.—— Dr. Frank E. Morley has been appointed health officer of Viroqua.——Dr. Frederick W. Bromley, Palmyra, after twenty-eight years of practice, has retired.——Dr. Gustave Bjorkman, Racine, is reported to be critically ill with gangrene of the right foot.

WYOMING

Personal.—Dr. and Mrs. Fred Horton, Newcastle, have started for a trip through the South.——Dr. Norvel H. Baker, Gillette, has been appointed house physician at the Sheridan Hospital, vice Dr. Vanatta, resigned.——Dr. Charles H. McLean, Laramie, is reported to be critically ill with pneumonia in Denver.

GENERAL NEWS

Association of American Physicians.—The Association of American Physicians, at its meeting in Atlantic City, elected Dr. J. George Adami, Montreal, president; Dr. Lewellys F. Barker, Baltimore, vice-president; Dr. George M. Kober, Washington, D. C., secretary; Dr. Solomon Solis-Cohen, Philadelphia, recorder; Dr. J. P. Crozer Griffith, Philadelphia, treasurer; Dr. Francis H. Williams, Boston, councilor; Dr. William S. Thayer, Baltimore, representative on the executive committee of the Congress of American Physicians and Surgeons, and Dr. Theodore C. Janeway, New York City, alternate.

Railway Surgeons Will Meet.—The sixteenth annual session of the Association of Southern Railway Surgeons will be held in Charlotte, May 29-31, under the presidency of Dr. William C. Day, Danville, Va. Dr. John R. Erwin, Charlotte, will deliver the address of welcome, to which Dr. J. Howell Way, Waynesville, will respond.

THE CHILD WELFARE EXHIBIT

A Presentation in New York and Chicago of Factors Influencing Childhood

The Child Welfare Exhibit, which opened in Chicago, May 11, and will continue until May 25, includes the New York Child Welfare Exhibit which was so successful in that city and is supplemented by an enormous amount of local material, which has become available for Chicago through the generosity of Mrs. Cyrus H. McCormick, Jr. Never since the conferences and exhibitions of the World's Fair in 1893 has such a general interest been emphasized in a civic or philanthropic exhibition. The exhibit was referred to editorially last week.

EXPLAINERS

The work of explaining the various features of the exhibit is in the hands of several hundred earnest workers who speak, not only English, but also all the languages used by the poly- glot population of Chicago; and in addition to the explainers most of the sections are in charge of experts in the field which they cover.

DEPARTMENT OF HEALTH

The exhibit of the Department of Health, Chicago, is espe- cially noteworthy. In one of the first booths there is a mechan- ical model to demonstrate how quickly the air is vitiated in a room with closed windows, and how fresh the air remains if the windows are kept open, and this is emphasized by posters and diagrams on the surrounding walls. In the Motherhood Booth the advantage of the breast-fed baby over the child who has a cow or a whole drove of cows for his foster-mother is shown and the cartoon indicates some of the chances of pollu- tion which dairy milk runs in its journey from the farm to the city. Diagrams, charts, models and cartoons innumerable show citizens how they can use or cooperate with the city's machinery in safeguarding the health or relieving the ail- ments of their children, and also trace the effects of physical defects or diseases on the physical and mental development of the child. The matter of communicable diseases of children is treated in the same manner, and maps and charts show the concentration of contagious diseases. The precautions to be taken to minimize infections are set forth and a simple method of disinfecting is demonstrated. A graphic representation of the mortality of children is shown in a mechanical procession of dolls like that of the apostles in the Strasburg clock, in which every fourth doll drops from the line to illustrate that only three out of every four infants grow to maturity. Demon- strations seem to be the slogan of the department. A model demonstrates the danger of the tuberculous cow to children, and there are illustrations of the proper methods of home filtra- tion, pasteurization and modification. The life of the fly is demonstrated and its effects as a disease carrier.

OPEN-AIR SCHOOLS

The open-air schools of Chicago have an interesting exhibit. Illinois, it is said, spends $1,187,000 every year in educating children who die of tuberculosis before they are twenty years of age, and whose lives might have been saved by transformation of the living conditions from unsanitary to sanitary by the substitution of good for poor food, and fresh for foul air. At the open-air schools there is no long confinement at desks for the pupil; there is plenty of rest, plenty of food and an abundance of fresh air. The result of the first year's work of these schools speaks for itself. The children who entered the schools were below grade and brought records of slow progress, trouble with teachers, an irregular attendance; but in the open-air school the child who had been kept from school by illness continued in school, well, and the intractable pupils became good students. An actual school completely furnished is shown in the exhibit, together with the tent used for shelter for the children in stormy weather. The work now being done in two of the public schools points the way to the work which eventually must be undertaken by the Board of Education, backed and supported by public opinion.

THE CONSERVATION OF VISION

An exceedingly interesting exhibit is that prepared under the supervision of a committee of which Dr. Thomas A. Woodruff was chairman on the conservation of vision and, the wording of two of the most interesting charts of this exhibit are here reproduced:

PREVENTION OF BLINDNESS—LEGISLATION NEEDED

A law to compel physicians and midwives to report all cases of red and swollen eyes in the new born to the local boards of health within twelve hours after discovery.

A law requiring local health officers to see that all cases of ophthalmia neonatorum receive adequate treatment.

A law compelling physicians to see that cases of contagious eye diseases are surrounded with prophylactic safeguards against communication.

A law requiring adequate training of midwives and systematic registration and control.

A law compelling manufacturers to install safety appliances to prevent injuries to eyes.

A law prohibiting the indiscriminate use of fireworks.

A law requiring the proper lighting of all public buildings, particularly factories and schools.

A law preventing the manufacture of wood alcohol.

A little care at birth would have saved about 35,000 eyes.

Immediate treatment and proper care would have saved about 21,000 eyes.

Industrial precautions would have saved almost 12,000 eyes.

A sane Fourth of July would have saved over 600 eyes.

Seventy thousand eyes sacrificed through carelessness and ignorance.

Cost in money to society, about $12,000,000 every year.

Of the 89,000 blind individuals in the United States, it is said that at least one in four goes through life "in the dark" because of the ignorance or carelessness of the one who attended him in the first hour and who failed to apply a simple and harmless remedy before the infection in the eyes could begin.

The exhibit also includes the accidents to the eyes, the effects of wood alcohol and tobacco, the effects of light on the eyes—both direct and artificial—and the proper diffusion and softening of artificial light; with general directions for the lighting of rooms and industrial lighting.

The American Association for the Conservation of Vision announces as its purpose the collecting and standardization of existing in formation on all subjects pertaining to the use and care of the eyes; the securing of the investigation of sub- jects on which present information is incomplete or contradic- tory, and the promulgating of knowledge relating to the con- servation of vision.

THE HEALTH ALPHABET

In the tuberculosis exhibit is a health alphabet prepared by a Chicago tuberculosis nurse, which is of sufficient value to reproduce.

HEALTH ALPHABET

A is for ADENOIDS which no child should own
B for right BREATHING to give the lungs tone
C is for COUGH which we should not neglect
D for the DENTIST who finds tooth defect
E is for EVILS of foul air and dirt
F is for FRESH AIR—too much cannot hurt
G is for GARDENS where boys and girls play
H is for HARDINESS gained in that way
I is for INFECTION from foul drinking-cups
J is for JOY in the bubbling taps
K is for KNOWLEDGE of rules of good health
L is for LUNGS whose soundness is wealth
M is for MILK, it must be quite pure
N is for NURSES, your health to insure
O is for OXYGEN, not found in a crowd
P is for PENCILS—in mouths not allowed
Q is for QUIET, which sick people need
R is for REST—as part of our creed
S is for SUNSHINE to drive germs away
T is for TOOTH BRUSH used three times a day
U is for USEFUL health rules in the school
V is the VALUE of learning these rules
W is WORRY, which always does harm
X is 'XCESS—indulge in no form
Y is for YOUTH, the time to grow strong
Z is for ZEST—help the good work along

In this exhibit is shown a tuberculosis map of Chicago, which shows that of the 3,948 children examined, 760 were suffering from pulmonary tuberculosis and 365 from tuberculosis of other portions of the body. In all, about one-third of the number examined—and these were not selected cases—were suffering from some form of the disease. There are also charts, illustrations and diagrams showing the work accomplished at the sanatoria of the Chicago Tuberculosis Association, illustrations of the outdoor sleeping porch and tent, the diet, kitchen, the milk laboratory, etc.

THE VISITING NURSES

The Visiting Nurses' Association shows its activity in child welfare work by its interesting exhibit. The association has the peculiar ambition and desire to work itself out of existence; so to improve conditions that there will be no need for its services, but, at the present time, not only has this not been accomplished, but the necessity for the use of more nurses has increased disproportionately with the supply of nurses to be obtained. An extensive series of photographs shows the work that is being done daily by the visiting nurses for the children of the poor. The nurse not only teaches the mother how to care for her child, but how properly to prepare food, and emphasizes by precept and example the necessity of cleanliness of person and surroundings.

CONFERENCES AND ENTERTAINMENTS

In addition to the exhibits daily conferences and entertainments are held in the conference room in the annex, in an adjoining church (Grace) and in the main court of the Coliseum. Demonstrations for parents, teachers and others to whom the custody of the child is entrusted form an important part of the conference programs. In a second group of conferences, experts in various lines of child service daily discuss the problems connected with their work and the direction in which an advance is most needed, such as social hygiene, the further development of juvenile court work, the better classification of children with reference to mental and physical defects, better cooperation between parents and teachers, the treatment of dependent, truant and delinquent children, and the better organization of recreational facilities. The third group of conferences is addressed by those who can best interpret the claims of child-life and child-care to the interest, support and service of the whole city. On the main floor of the Coliseum daily entertainments of various kinds, as musical, athletic, apparatus work, plays, etc., are given daily by children of all ages. The results of such an exhibit must be far-reaching and will make for a better and healthier childhood.

FOREIGN NEWS

International Sanitary Conference.—The United States Department of State has been recently advised by the French government that the International Sanitary Conference called by that government to meet in Paris May 26, has been postponed until Oct. 10, 1911. The object of this conference is stated in the invitation to be to revise, to amend and, should the occasion arise, to complete the Sanitary Convention of Dec. 3, 1903, as to the measures to be applied by the powers participating in the conference to control the spread of plague, cholera and yellow fever. It is probable that among the amendments which will be adopted at this conference will be additional articles relating to yellow fever, closely corresponding with those adopted by the Second General International Sanitary Convention of the American Republics, Washington, Oct. 14, 1905. The representatives on the part of the United States who have been designated to attend this conference are Lt. Colonel J. R. Kean, Medical Corps, U. S. Army; Surgeon J. C. Pryor, U. S. Navy, and Surgeon Henry D. Geddings, U. S. Public Health and Marine-Hospital Service.

CANADA

McGill Alumni Reunion.—There will be a reunion of the graduates of the medical department of McGill University, Montreal, in that city June 5-6, just before the meeting of the Canadian Medical Association.

Academy Meeting.—The fourth annual meeting of the Toronto Academy of Medicine and the first to be held in its new home in Queen's Park, was held May 3, and the following fellows were elected to office: President, Dr. Newton A. Powell; vice-president, Dr. Richard A. Reeve; past president, Dr. Albert A. Macdonald; honorary secretary, Dr. W. Harley Smith; honorary treasurer, Dr. William A. Young; and chairman of sections-medicine, Dr. Graham Chambers; surgery, Dr. Herbert A. Bruce; pediatrics, Dr. John T. Fotheringham; pathology, Dr. John J. McKenzie; ophthalmology, Dr. Charles Trow, and state medicine, Dr. John S. McCullough.

Personal.—Dr. J. L. Todd, St. Anne, Que., of McGill University, has started for West Africa to study sleeping-sickness. ——About fifty members of the staff of Toronto General Hospital attended a banquet in Toronto, April 9, in honor of Dr. John Nelson Elliott Brown, the retiring general superintendent. A handsome silver salver was presented to Dr. Brown and an illuminated address was read and presented by Dr. David J. G. Wishart.——Dr. Henry Raymond Casgrain, Windsor, has been elected chairman of the liquor license commission for that district.——The council of the Royal Geographical Society of England has awarded to Dr. Wilfred T. Grenfell, St. Anthony, Labrador, the Murchison bequest for the current year in recognition of his contribution to the geographical knowledge of the world.

LONDON LETTER

(From Our Regular Correspondent)

London, May 6, 1911.

A Committee of the British Medical Association for the Investigation of the Treatment of Fractures

About twenty years ago, "collective investigation" was employed by the British Medical Association for the investigation of disease. This consisted in issuing to physicians blanks on some question in need of investigation. These when filled in and returned were handed over to some authority on the subject for collation, and the results were published in the *British Medical Journal*. The project was started with high hopes; it was thought that the collected experiences of many men would do much to advance medical science and furnish results where individual experience had failed. But in spite of a large amount of work, freely and unsparingly done both by physicians and by eminent authorities who collated the observations, the tangible results were insignificant and it is impossible to point to a single discovery of even minor importance made by this method. Even the very term "collective investigation" has fallen out of use. Such a result might have been anticipated. Observations have weight as well as number, and require skill and experience. Where skilled investigators have failed a host of observers not selected for any special aptitude cannot be expected to succeed. All the discoveries of medicine, whether great or small, have been made by individuals working alone or with a few collaborators selected for the purpose. The Hippocratic maxim as to the difficulty of experience has especial application to investigations carried out by many observers. However, the method has been revived by the association. In consequence of a recommendation made by the section of surgery at the last annual meeting on the conclusion of the discussion on the operative treatment of simple fracture, the council has appointed a committee to inquire into the ultimate results obtained in the treatment of simple fractures with, or without, operation. A notice has been published in the *British Medical Journal* requesting the cooperation of surgeons, surgical registrars of hospitals and other practitioners who may be in a position to assist the inquiry to let the committee have access to records of suitable cases. The investigations will be limited to simple fractures of the long bones which have occurred in the five years 1906-1910.

Destruction of Fleas by Exposure to the Sun

In India the prevalence of plague renders the destruction of fleas a serious problem. For the destruction of these pests in travelers' baggage various powders have been tried. Napththalin acted well, but was too slow, requiring six and one-half hours to kill fleas in a closed space and nine hours in the open. It was then determined to ascertain the effect of the heat of the sun. The results are given in a very instructive "Memoir of the Medical and Sanitary Departments of the Government of India," by Capt. J. Cunningham, an army surgeon. In previous experiments it had been found that rags spread on the ground in thin layers were freed from fleas in three hours. In the present investigation the attempt was made to determine the different ways in which fleas behave when clothes are spread on different kinds of ground. Tin trays 4 by 4½ feet, with sides 4 inches high were made. In these were placed cotton carpets (*dhurries*) and a hundred fleas were introduced, half above and half below the carpet. The tray was drawn out into the sun and the behavior of the fleas carefully watched. They were seen to escape from the glare, but after seven minutes all on the surface were killed, and at the end of half an hour also all those beneath the carpet. When carpets were spread on sand the effects were more marked, the sand absorbing the sun's heat faster than the trays. The fleas made no attempt to burrow into the sand and were almost immediately killed. When the carpets were spread on leaves and grass the fleas dived under the grass and got protection from the sun. With carpets spread on hard ground the time necessary for the destruction of all fleas was forty-five minutes; on sand, somewhat less, the temperature being 117 F. under and 118-142 F. on the surface of the carpets. Experiments were also made with the padded cotton quilts, used by the natives, to see if they protected fleas from the sun's heat. In one or two cases the heat did not penetrate the whole thickness of the quilt and some fleas survived, but on turning the quilt over no fleas were found alive after an hour's exposure to the sun; the temperature inside the quilt was found to be 143 F. The following rules have therefore been drawn up for the disinfection of flea-infested clothing by a means which is simple, reliable, and free from expense. The ground must be fully exposed to the sun and devoid of anything that can shelter the fleas, and should be covered with a 3-inch layer of fine sand. The surface temperature of the sand must be at least 120 F. before the clothing is spread. The clothes must be spread evenly in a single layer for one hour, padded articles being turned once or twice. No clothes must be placed within three feet of the edge of the sand (to prevent the fleas from traveling away). The whole area should be fenced in to keep off animals.

PARIS LETTER

(From Our Regular Correspondent)

Paris, May 5, 1911.

The Sense of Direction Among the Blind

During one of the last sessions of the Académie des Sciences, M. Truschel, of Strasburg, read a communication on the sense of direction in the blind. It is known that the blind find their way very easily and that they seem to avoid obstacles as if they had a special sense. Some authors, to explain these phenomena, have assumed a new sense, sometimes called "the sixth sense of the blind." It has even been maintained that obstacles are felt by means of unknown emanations. It appears, from experiments undertaken by M. Truschel, that the blind have actually the ability to perceive obstacles at some distance, but it is not a sixth sense, the sensation being due exclusively to reflection of sound and not being peculiar to the blind exclusively. For instance, when the ground is covered with snow or the floor with a carpet, the blind find the greatest difficulty in orienting themselves. Therefore, they are able to perceive obstacles brought close to them very slowly and silently, only when there is absolute silence in the room. When the head of the blind person is enveloped with paper, cloth, etc., however, the perception persists. Only a large cylinder surrounding the head can suppress the sensation, because it produces the same effect as the approaching object. M. Truschel believes that the organ of these perceptions is the labyrinth, and that the sense of direction which is so highly developed among certain animals may be explained in the same way.

Monument to Dr. Mesny

A committee has been formed to erect a monument to Dr. Gérald Mesny, who died a victim of his devotion at Foudzadian (The Journal, March 18, 1911, p. 826). M. Berteaux, minister of war, has accepted the honorary presidency of the committee. A subscription will be opened at Tien-Tsin, among the residents and the French physicians, the mandarins and the Chinese students of the school of medicine, of which Dr. Mesny was professor.

The Training of Dogs for the Sanitary Service

In a previous letter I mentioned encouraging results obtained in the experimental employment of dogs for the search of the wounded (The Journal, Sept. 17, 1910, p. 1036). The ministry of war has just created at Fontainebleau, near Paris, military kennels for the breeding and training of the sanitary service dog.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, April 27, 1911.

Benzoic Acid and Its Salts as Food Preservatives

The official board of experts (*Wissenschaftliche Deputation für das Medizinalwesen in Preussen*) has presented a report to the Prussian ministry regarding the permissibility of the use of benzoic acid and its salts for the preservation of foods. In this report the investigations made by the United States Department of Agriculture under Wiley are referred to, by which it was shown that benzoic acid produces poisonous effects only in relatively large doses. The board, however, believes it cannot be said with certainty at present that larger doses (to the amount of several grams) will be permanently so harmless to all human beings as the smaller amounts. The experiments of the American scientists were of too short duration and the results subject to such limitations that they cannot be regarded as convincing proofs of the unconditional harmlessness of the acid. Taking into consideration food legislation in other countries, the board comes to the conclusion that the use of benzoic acid and benzoates for the preservation of foods should not be permitted. The danger of harm is most marked with children and weak or sick individuals. A further objection is raised against chemical food preservatives in general, namely, that by their use the care necessary to prevent food from putrefying or molding will be neglected by manufacturers and dealers.

Personal

Professor Moritz of Strasburg has accepted the call as director of the medical clinic of the academy for practical medicine in Cologne.

Professor Leube of Würzburg contemplates resignation from his teaching position at the end of the summer semester on account of his advanced age.

Professor Manz, the ophthalmologist of Freiburg, died April 21, at the age of 78 years. He joined the faculty in 1859 and became director of the eye clinic in 1868. His chief works dealt with the development, malformations and tuberculosis of the eye and with optic neuritis. He retired from active work in 1901.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, May 1, 1911.

Responsibility of Physicians and Medical Institutes

The problem of medical responsibility has commanded the attention of physicians in a high degree for the last few years, owing to recent lawsuits which have taken place in this country. Especially *x*-ray workers have lately been victims of such actions, and although in all the recent cases the claims have been dismissed, nevertheless the worry and trouble incurred by the doctors were very telling. Surgeons and obstetricians have lately had to fight out such claims, and in one instance a rhinologist was accused of having disfigured a man whose nose assumed a shape not expected by the patient before he submitted to a plastic operation of this organ. Also hospitals have been sued for damages by patients and in one instance the junior house surgeon, who actually was so unfortunate as to be guilty of malpractice, had to pay heavy damages. The consequence of it was that the members of all the hospital staffs refused to work in the government hospitals unless they were insured against liabilities arising out of such occurrences. A special insurance company has been established by physicians for physicians, whose chief object is to protect the profession against such claims. The medical associations have repeatedly admonished their members to be careful in such instances, and that all medical colleagues should be defended against unjust attacks. Furthermore, all hospitals have been warned against operating on a patient without the written consent of the patient, or, in case he be a minor or not fit to judge for himself, without the consent of his responsible friends. Great stress is laid on the qualities of the anesthetist in operations. In this country he must be a duly qualified M.D. Perhaps to these stringent precautions we owe the relative scarcity of deaths under an anesthetic, otherwise a fruitful source of claims for compensation by the relatives. At present nearly all physicians practicing surgery of any kind in this country, and all hospital physicians also, belong to one or another of the insurance companies. The rate of premiums is 25 kronen ($5) for insurance up to the sum of 20,000 kronen ($4,000), with an additional 10 kronen for each further 10,000 kronen insured. The hospitals are insured, not per person especially named, but per number of doctors employed. The medical councils are at present engaged in statistical research of the points in question: the actual damage done to a patient, whether moral or material, and the actual error on the part of the physician or the nurse or other person employed by the physician, as well as the sums claimed for damages and the sums awarded them in court.

Schools for Crippled Children

A number of children have been placed in special institutions lately in this city with an object of studying the possibility of schools for cripples. The idea is to help those children who are defective in one or more organs, excluding the blind, deaf and mute. The experimental classes consist of forty-three boys, of whom thirteen have lost the normal use of the right arm; seven have lost the right, nine the left eye; fourteen are hunchbacks, while nearly all of the latter show also pathologic changes in the extremities. The children are taught as far as possible on equal lines with normal children of the corresponding age, but with special attention to the individual defect. As far as the results obtained already can be judged, teaching begun early will make the child as useful a citizen as any other person. Great stress is laid on teaching of such subjects as will be of use in future in helping the cripple to earn a living.

Marriages

Lucius C. Buckley, M.D., New York City, to Miss Edna Bruner of Sacramento, Cal., at Petchaburi, Siam, March 20.

James Gilbert Howard, M.D., Ozone Park, L. I., to Miss Mabel E. Clarke of Brooklyn, at Newark, N. J., May 11.

Rena May Heilman, M.D., Leechburg, Pa., and Alexander Pitcairn Lindsay of Pittsburg, at Leechburg, April 12.

George Andrew Cathey, M.D., Portland, Ore., to Miss Bertha Anne Kruse of North Bend, Ore., April 28.

Charles M. Steele, M.D., Reno, Nev., to Mrs. Mylo Egan of New York City, in San Francisco, April 28.

Samuel E. Grout, M.D., Birmingham, Ala., to Miss Mary Stewart Wells of Dyersburg, Tenn., May 18.

Frederick R. Williams, M.D., Bisbee, Ariz., to Miss Elizabeth A. Taft of Houston, Tex., April 26.

James Alexander Logan, M.D., Colona, Ill., to Miss Clara Rimbey of Murrayville, Ill., April 24.

Thomas J. Lynch, M.D., St. Joseph, Mo., to Miss Clare O'Connor of Buffalo, N. Y., May 1.

William Wesley Peter, M.D., Toledo, to Eleanor E. Whipple, M.D., of Chicago, May 4.

Lonnie L. Lanier, M.D., Stillmore, Ga., to Miss Marguerite Harper, at Stillmore, May 7.

Rocco Andrew Montani, M.D. to Miss Eustasia Morone, both of Indianapolis, May 3.

Carl H. Meyer, Jr., M.D., to Miss Johanna N. Jurgensen, both of Baltimore, April 25.

Edward L. Heintz, M.D., to Miss Bertha Marie Hansen, both of Chicago, May 4.

Charles Edward Sidwell, M.D., to Miss Ruth Edna Allen, both of Chicago, May 11.

Emil Geist, M.D., Minneapolis, to Miss Augusta Ohage of St. Paul, May 9.

Manney Rice, M.D., to Miss Mabel Smith, both of Columbia, S. C., April 30.

Deaths

Roscoe H. Ritter, M.D. Medical College of Indiana, Indianapolis, 1897; a member of the Indiana State Medical Association; secretary of the Indianapolis Medical Society; pathologist to the Indianapolis City Hospital; professor of pathology in the Indiana Medical College, and chairman of the college curriculum committee; professor of materia medica and therapeutics in the Indiana Dental College; died at his home, May 6, from nephritis, aged 37. The Indianapolis Medical Society and the faculty of the Indiana University of Medicine, at special meetings held May 6, adopted resolutions regarding the death of Dr. Ritter.

William A. Duncan, M.D. Chattanooga (Tenn.) Medical College, 1898; a member of the American Medical Association, and Association of Southern Railway Surgeons; president of the Chattanooga Academy of Medicine and Hamilton County Medical Society in 1910; for one term city physician of Chattanooga, and a member of the staff of the Erlanger Hospital; local surgeon for many of the railways centering in Chattanooga; died at the home of his parents in that city, May 4, from tuberculosis, aged 35.

William Samuel Smith, M.D. University of Southern California, Los Angeles, 1902; for two years assistant surgeon at the Los Angeles County Hospital and then a practitioner of Arizona for three years; a member of the territorial board of examiners of the insane; physician of Yavapai County and superintendent of the county hospital; died at his home in Santa Monica, Cal., February 19, aged 32.

Jasper Tidball, M.D. University of Michigan, Ann Arbor, 1874; Bellevue Hospital Medical College, 1878; a member of the American Medical Association; local surgeon at Grafton, Ill., for the Chicago, Peoria and St. Louis Railway; who gave up practice about two years ago and went to San Diego, Cal.; died at his home in that place, April 25, from pernicious anemia, aged 62.

Thomas C. Longino, M.D. Southern Medical College, Atlanta, Ga., 1895; a member of the Medical Association of Georgia; captain and assistant surgeon of volunteers during the Spanish American War, and thereafter for a time a practitioner of Galveston, Tex.; died at his home in Atlanta, April 28, aged 37.

George Washington Talson, M.D. New York University, New York City, 1860; for several years a member of the staff of St. Francis Hospital, Jersey City, and physician to the Little Sisters of the Poor; died at the home of his sister in Wheeling, W. Va., April 19, from heart disease, aged 70.

Samuel Eccleston Holtzman, M.D. New York University, New York City, 1862; assistant surgeon and surgeon of the Fifty-Eighth Indiana Volunteer Infantry during the Civil War; formerly of Pontiac, Ill., but of late years a resident of Takoma Park, D. C.; was found dead at his summer home in Ocean Grove, N. J., May 8, from heart disease, aged 73.

Charles Magnus Brucker, M.D. Eclectic Medical Institute, Cincinnati, 1882; for one term mayor of Tell City, Ind., and for two terms a member of the common council; president of the local medical board; a member of the local pension board and local surgeon to the Southern Railway; died at his home, May 9, aged 51.

Madison Waldo Leonard, M.D. University of Alabama, Mobile, 1894; of Attala, Ala.; a member of the Medical Association of the State of Alabama; died in that place, April 30, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent while despondent, aged 45.

James Huntington Bailey, M.D. University of Vermont, Burlington, 1857; the oldest practitioner of Ticonderoga, N. Y.; surgeon of the Eighth Vermont Volunteer Infantry during the Civil War; died at his home, April 13, from the effects of a fracture of the hip, due to a fall seven months before, aged 77.

John B. Trowbridge, M.D. Rush Medical College, 1882; a member of the American Medical Association; local surgeon at Haywood, Wis., for the Chicago, Milwaukee and St. Paul Railway, and a member of the local board of United States pension examining surgeons; died at his home, in April, aged 60.

William Alfred Trueblood, M.D. University of Alabama, Mobile, 1902; Washington University, St. Louis, 1903; a member of the American Medical Association; formerly of Ottumwa, Ia., and a member of the staff of the Ottumwa Hospital; died in Baker City, Ore., May 1, from pneumonia, aged 37.

James M. Louther, M.D. Philadelphia University of Medicine and Surgery, 1865; one of the oldest practitioners of Somerset County, Pa.; for many years a practitioner of Stoyestown; at one time a member of the State Board of Medical Examiners; died at his home in Somerset, April 25, aged 72.

George W. Hafele, M.D. University of Maryland, Baltimore, 1908; of Baltimore; died at the home of his sister in that city, May 3, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent while despondent from over-study, aged 32.

Emanuel T. Rehrig, M.D. Medico-Chirurgical College of Philadelphia, 1907; a member of the American Medical Association; for four years resident physician at the Whitehaven (Pa.) Sanatorium for Tuberculosis; died at the home of his parents in Easton, Pa., April 28, aged 28.

Augustus Alexander Clewell, M.D. University of Louisville, Ky., 1871; a member of the American Medical Association; a Confederate veteran; for thirty years a practitioner of Baltimore; died at his home in that city, April 28, from angina pectoris, aged 65.

Benjamin Kinyon, M.D. University of Michigan, Ann Arbor, 1871; for many years a practitioner of Cincinnatus, Ill.; for eight years a member of the Board of Supervisors; died at the home of his daughter in Wilmette, Ill., April 12, aged 68.

Henry Kunkel, M.D. College of Physicians and Surgeons, Baltimore, 1889; a member of the American Medical Association and American Academy of Medicine; died at his home in Kingston, Pa., April 26, from chronic bronchitis, aged 49.

Henry Jay Brink, M.D. New York University, New York City, 1883; physician of Britt, and Hancock County, Iowa; was found dead in a livery barn in Britt, May 8, after returning from a professional call, from heart disease, aged 51.

Benjamin S. Shaug (license, Iowa, years of practice 1886); a veteran of the Mexican War, and a surgeon throughout the Civil War; for twenty years a practitioner of Eldon, Ia.; died in Ottumwa, April 28, from cerebral hemorrhage, aged 84.

Thomas Callaghan, M.D. Baltimore (Md.) Medical College, 1900; of Smith's Hill, Providence, R. I.; a specialist in obstetrics and diseases of children; died at the East Side Hospital, Providence, May 5, from cerebral hemorrhage, aged 39.

Alexander J. Rogers (license, Westmoreland County, Pa., twenty years of practice, 1881); a veteran of the Civil War; for many years a practitioner of Scottdale; died at the Rogers homestead in Connellsville, April 28, aged 76.

Marquis Greenwald (license, Indiana, 1897); a pioneer practitioner of Auburn, where he had practiced twenty years; died at the home of his daughter in Auburn Junction, April 25, from cerebral hemorrhage, aged 76.

Harry H. Baker, M.D. Chicago Homeopathic Medical College, 1897; of Chicago; for several years a lecturer on materia medica at Hahnemann Medical College; died in Brooklyn, May 13, from heart disease, aged 45.

Emory E. Howard, M.D. University of Vermont, Burlington, 1884; formerly of South Hadley, Mass.; secretary and treasurer of the Florida Open Air Association; died at his home in Sorrento, May 1, aged 60.

Perdelete Hebert, M.D. Bellevue Hospital Medical College, 1898; a member of the American Medical Association; died at his home in Iron Mountain, Mich., April 26, from carcinoma of the stomach, aged 53.

Henry Garrettson Spooner, M.D. Harvard Medical School, 1897; formerly of Boston; first editor of the *American Journal of Urology*; died in the Massachusetts General Hospital, Boston, May 3, aged 39.

John S. Renninger, M.D. Hahnemann Medical College, Chicago, 1881; formerly a member of the Minnesota State Medical Association; died at his home in Marshall, Minn., last month, aged 54.

Selden LaFayette Blake, M.D. *California* Eclectic Medical College, Los Angeles, 1880; of San Francisco; died in the Irving Sanatorium in that city, April 28, from cerebral meningitis, aged 54.

Henry Rossignol, M.D. Medical College of Georgia, Augusta, 1848; surgeon in the Confederate service throughout the Civil War; died at the home of his daughter in Atlanta, Ga., April 25, aged 85.

Andrew F. Hammer, M.D. Hahnemann Medical College, Chicago, 1878; a member of the Illinois State Medical Society; died at his home in Taylorville, May 1, from nephritis, aged 61.

Charles A. Walters, M.D. New York Homeopathic Medical College, New York City, 1878; died suddenly at his home in Brooklyn, May 2, from cerebral hemorrhage, aged 57.

Dyas C. Ellis (license, Missouri, 1883); for fifty years a practitioner of Missouri; a veteran of the Civil War; died at his home in Garden City, April 21, aged 78.

Emmett Eugene Horn, M.D. *College of Physicians and Surgeons*, Chicago, 1906; died at his home in Englewood, Colo., March 14, from tuberculosis, aged 29.

William L. Stephens, M.D. Eclectic Medical Institute, Cincinnati, 1901; formerly of Lenapah, Okla.; died at his home in Idaho, April 1, aged 52.

T. M. Morton (*registration, Oklahoma, act of 1908*); for many years a practitioner of El Paso, Ark.; died at his home in Davis, Ark., April 30.

Leonard Von Stein (license, Ohio, years of practice, 1896); of Upper Sandusky, O.; died in the Wyandot County Infirmary, April 25, aged 81.

William H. Kindleberger, M.D. Indiana Medical College, Indianapolis, 1875; died at his home in Indianapolis, May 2, from neuritis, aged 54.

William H. Yarnall, M.D. Eclectic Medical Institute, Cincinnati, 1865; died at his home in Detroit, May 6, from pneumonia, aged 68.

Jonathan Edward Burford, M.D. *Jefferson Medical College*, 1879; of Patterson, Tex.; died in San Antonio, April 27, aged 55.

George W. Harmon, M.D. Hahnemann Medical College, Philadelphia, 1884; of Newark, N. J.; died in Mena, Ark., April 21.

William Anderson, M.D. Victoria College, Coburg (Ont.) 1858; died recently at his home in Newcastle, Ont., aged 74.

Adolphus T. Keckler, M.D. Physio-Medical College, Cincinnati, 1866; died at his home in Cincinnati, April 22, aged 80.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

TUCKER'S ASTHMA SPECIFIC

An Insidiously Dangerous Cocain Mixture

This nostrum is sold by a Dr. Nathan Tucker of Mount Gilead, O., and is applied locally by means of an atomizer. When written to, Dr. Tucker sends a form letter with circulars describing his "system" for the cure of "asthma, hay fever and nasal catarrh." The "treatment," for which $12.50 is asked, consists of an atomizer and 4 ounces of the "cure." This nostrum has been analyzed repeatedly and in each case, so far as we know, cocain has been found in it.

In 1903, Aufrecht examined the stuff and assigned to it the following composition:

Cocain hydrochlorid	1 per cent.
Potassium nitrate	5 per cent.
Glycerin	35 per cent.
Bitter almond water	35 per cent.
Water	25 per cent.
Vegetable extractives (probably from stramonium)	4 per cent.

In common with nostrums of all kinds, its composition seems to change with the whim of the manufacturer, for when Bertram analyzed the preparation in 1905, he reported finding:

Atropin sulphate	1 per cent.
Sodium nitrate	4 per cent.
Vegetable extractives, dissolved in water with some glycerin	0.52 per cent.

Still later O. Anselmino (*Pharmaceutische Centralhalle*, Dec. 6, 1906) reported that one of his analyses disclosed the presence of hydrocyanic (prussic) acid, but that the analyses of another sample did not show the presence of this drug. He also reported finding a nitrite in the first sample examined but no potassium nitrate. The amount of alkaloid found by Anselmino was 1 per cent., the greater part of which was cocain.

In THE JOURNAL, August 4, 1906, Dr. Herman Vickery of Boston, reported that he had had analyses made of this preparation and that 7 grains of cocain hydrochlorid had been found in each ounce of the remedy. In THE JOURNAL, August 28, 1906, Dr. N. P. McGay of Shiloh, O., reported a case of cocain poisoning in a 5-year old child from the use of Tucker's preparation.

The Massachusetts State Board of Health, in its official bulletin for January, 1907, listed Tucker's Asthma Specific among other cocain-containing preparations which are unsalable in that state.

The London *Lancet*, Feb. 29, 1908, reported a case of poisoning following the use of this preparation. The victim was a married woman, age 36, who had been suffering for some time from asthma. The physician who was called just before her death discovered symptoms of cocain poisoning and refused to give a certificate of death. At the inquest it was shown that she had been taking the Tucker preparation for about two years. In the same issue, the *Lancet* stated that the British agent for this nostrum had been prosecuted under the Pharmacy Act for selling a product containing certain poisons (cocain and atropin) without labeling the preparation "poison." Analysis of the asthma cure at that time was said to have shown the presence of 3.6 grains of cocain and 0.91 grain of atropin to the ounce.

In 1910, the United States Department of Agriculture issued "Farmers' Bulletin 393," a twenty-page pamphlet entitled, "Habit-Forming Agents," by Dr. L. F. Kebler, Chief of the Division of Drugs of the Bureau of Chemistry. In this pamphlet the public was warned against using the various nostrums containing habit-forming drugs. Under "Asthma Remedies" the following statement appears regarding Tucker's "cure":

> "An example of the cocain type is 'Tucker's Asthma Specific,' which consists of a solution of cocain and is sold throughout the United States as a result of extensive advertising and personal recommendation. The 'Asthma Specific' consists of a bottle of medicine containing cocain to be used as a spray with an atomizer. The price of the latter is $12.50. Recent investigations showed that the amount of cocain purchased by the promoter of this remedy from a single manufacturing house during four months varied between 256 and 384 ounces a month."

In March, 1911, a physician sent to the Association's laboratory a sample of this nostrum. Analysis indicated once more that cocain was present.

When one considers the prevalence of the cocain habit and the demoralizing and brutalizing effect that this habit has on its victims, the viciousness of the indiscriminate sale of a preparation of this sort becomes evident. While the excuse is made by the exploiter of this dangerous nostrum that the amount of cocain that it contains is very small, every physician knows that the application of drugs to the nasal mucous membrane will produce *constitutional effects* in quantities that would be considered negligible if administered by mouth. It is only necessary to call attention to those cocain habitués, known as "coke-sniffers," to realize the enormous harm that can be done by the taking of cocain in this way. Under the existing federal law, it is impossible to reach the men who engage in this cocain dispensing traffic, unless they make misstatements on the label. It is high time, then, that the various states enact such laws as will make the promiscuous distribution of cocain a penal offense. When this has been done, Nathan Tucker may perforce engage in a business that will be more respectable, if less profitable, than his present occupation.

MAGIC FOOT DRAFTS

An International Rheumatism Cure Fake

This widely advertised humbug is sold as a cure for rheumatism. It emanates from Jackson, Mich., a town that has the unenviable distinction of being the home of a large number of international medical fakes.

F. G. Badgley, is said to be not only president of this company, but also secretary and treasurer of the J. Lawrence Hill consumption cure fraud[1] and president of the Van Vleck pile cure concern; Badgley is also a lawyer. Whether his interest in law is greater than his interest in quackery, we do not know.

H. H. Mallory, is said to be vice-president of the Magic Foot Draft Company, ex-vice-president of the Hill consumption cure fake and vice-president of the Van Vleck pile cure. Mr. Mallory is also an advertising agent.

R. A. Oliver, whose name still appears in connection with the advertisements of this fake, is said to be no longer living although it is understood that his estate still has an interest in the Magic Foot Draft Company. In common with others of the group, Oliver when living was connected with the Hill consumption cure and the Van Vleck pile cure.

The Magic Foot Draft Company is said to have a somewhat extensive printing plant. This may explain the typographic sameness of much of the advertising sent out by the Hill, the Van Vleck and the Magic Foot Draft concerns.

The foot drafts consist of plasters to be applied to the soles of the feet. The plaster mass is in the central portion of the unfinished side of a sort of oilcloth, the margin of which is coated with an adhesive mixture. The ingredients of the plaster mass were investigated by Dr. L. F. Kebler of the Bureau of Chemistry and the results published some time ago[2] in The Journal. Dr. Kebler reported that the composition of the plaster was:

Poke root	30 per cent.
Pine tar	62 per cent.
Cornmeal	8 per cent.

Dr. Kebler reached the following conclusion regarding the value of the Magic Foot Draft: "They possess no curative element whatever, which when absorbed into the blood will neutralize the poisons which are supposed to be the cause of the rheumatism and in this manner effect a cure."

At the same time, Dr. Kebler also called attention to the fact that the Magic Foot Draft Co. sent out pills of methylene-blue under the name, "Magic Regulators." The value of the Magic Regulators was thus described by the company:

> "To prove the action of our Magic Regulators on the kidney, the organs which in rheumatism are always diseased and fail to do their work, allowing the poisonous acids to accumulate and lay the foundation for a long and painful run of rheumatism, watch the color of the urine, voided. If it assumes a light blue or bluish green color you may rest assured that the Magic Regulators are doing their work."

As the urine of every healthy person always "assumes a light blue or bluish-green color," when methylene blue is administered, it is needless to say that the "Regulators" usually did their work!

The Magic Foot Draft concern advertises heavily in Great Britain and for this reason the British Medical Association recently analyzed the plaster mass of the foot drafts. Their chemist reported:

> "The plaster itself weighed about 80 grains and was found to be a mixture of Stockholm tar and the powdered rhizome of white hellebore; determination of their proportions showed the formula to be approximately:
>
> "Powdered white helebore (veratrum viride)..40 per cent.
> "Stockholm tar ....60 per cent.
>
> "No other ingredients could be detected. Estimated cost of ingredients for one pair, 1/6 of a *penny*." (1/3 of a cent.) Selling price, $1.00!

The difference in the findings of the British and American chemists bears out what has been stated many times, namely, that the composition of nostrums can never be relied on. From what has been said, it is evident that Mr. Adams, in his Great American Fraud series, characterized the Magic Foot Drafts correctly when he said: "Affixed to the soles of the feet they are advertised as drawing out the rheumatic poison from the whole system. Of course they might as well be affixed to the barn door, so far as any uric acid extraction is concerned."

Correspondence

The Round-Ligament Operation

To the Editor:—I have read with much interest the letters of Dr. J. Clarence Webster, of Chicago, and Dr. J. M. Baldy, of Philadelphia, in The Journal, A. M. A., April 29, p. 1280, regarding the origin of the so-called Webster or Baldy operation for suspension of the uterus by posterior suture of the round ligaments. This argument is most amusing to one familiar with certain facts, which, with your kind permission, I shall endeavor to set forth herein.

In 1900 and 1901 I held the chair of anatomy and operative surgery in the Post-Graduate Medical School of Chicago. Sometime in the year 1900, Dr. Frank Andrews, of Chicago, told me of an operation for suspension of the uterus that he had then been using for more than ten years. Dr. Andrews' operation consisted of drawing the round ligaments backward through the broad ligaments beneath the Fallopian tubes, and suturing them to each other and to the posterior surface of the uterus, thus suspending the uterus in a sling.

This operation appealed to me, and I taught it to my classes in gynecology, on the cadaver, and in my lectures at the Chicago Post-Graduate Medical School, calling it the Andrews operation. My first opportunity to try this operation on the living individual came in June, 1901. The patient, Mrs. C. M., entered Chicago Hospital (record number 2,584), and was operated on June 18, 1901. Through a median abdominal incision the uterus and appendages were freed from adhesions; the diseased right ovary and tube were removed; an intraligamentous cyst was enucleated from the left broad ligament, and the uterus was suspended by bringing the round ligaments together behind the uterus and suturing them to each other and to the posterior uterine wall. This patient recovered with the usual pain following this procedure, but with the uterus in good position.

I did this operation next on Mrs. E. M., at the Chicago Post-Graduate Hospital, Aug. 13, 1901. My case record shows that I amputated the cervix, curetted, made a median abdominal incision, resected one-quarter of the left ovary, removed the degenerated right ovary, and a right hydrosalpinx, and suspended the uterus by passing both round ligaments through the broad ligaments and suturing them to each other and to the posterior wall of the uterus.

The next patient on whom I performed this operation was Mrs. M. H., sent into Chicago Hospital by Dr. R. C. Cupler, of Chicago. The record number was 2,696; she was operated on Sept. 8, 1901. I was assisted by Drs. R. C. Cupler and Roy M. Wheeler; the anesthetic was administered by Dr. J. G. Chichester. A typical Andrews operation was done, both round ligaments being drawn backward through the broad ligaments and sutured together and to the posterior uterine wall.

While this patient was still in the hospital, Dr. J. Clarence Webster sent a patient into the Chicago Hospital and did a ventral suspension.

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[1] The exposès of this and similar frauds have been reprinted in the pamphlet "Consumption Cure Fakes," price 6 cents.

[2] Kebler, L. F.: Nostrums and Fraudulent Methods of Exploitation, The Journal A. M. A., Nov. 10 and 17, 1906.

The house surgeon, Dr. J. G. Chichester, took the liberty of talking to Dr. J. Clarence Webster about the Andrews operation on the round ligaments that I had done a few days before.

A few weeks later, viz., Oct. 5, 1901, there appeared in The Journal A. M. A., an article by Dr. J. Clarence Webster descriptive of his new suggestion for uterine suspension, illustrated with very crude drawings. In this paper technic only was discussed, no cases being reported.

I have no comment to make on this coincidence. Frequently like operations are conceived by different men—often by men residing in different localities.

I have no doubt that Dr. Webster, having independently conceived the operation, naturally desired to be the first to publish a description of it.

I do desire to state, however, that Dr. Frank Andrews, of Chicago, is the real pioneer in round ligament suspension and should be so accredited.

Raymond C. Turck, Jacksonville, Fla.

To the Editor:—A good way to settle the Baldy-Webster priority controversy, in my humble opinion, would be for the disputants to shake hands and agree that they have discovered something that wasn't worth finding.

Their operation practically sacrifices the inner strong ends of the round ligament, and puts all the weight and strain on the outer attenuated and weakened ends of the ligament. Their operation has no advantage over Alexander's or one of its modifications in uncomplicated cases, and certainly is not so good as Montgomery's or the old ventral suspension in those cases requiring laparotomy—ventral suspension to be used in postclimacteric cases only of course.

The Baldy-Webster proposition's greatest weakness is the fact that it does not raise the uterus up unless the broad ligament is perforated low enough down to invite postoperative flexion. It simply draws the organ forward and in that respect is not so effective as Alexander's operation.

Let Drs. Baldy and Webster "bury the hatchet" and compromise on the Montgomery modification of Gilliam's operation for retrodeviations demanding surgery, and devote themselves to solving some of the real problems in pelvic diseases.

C. F. English, M.D., Sonora, Cal.

Lectures on Sex Hygiene

To the Editor:—It seems to have been agreed by the various societies of social hygiene in this country that, for the present at least, the best results in the campaign against the social evil can be attained by educating the public, along sanitary rather than moral lines, in matters of sex hygiene. A recent article by W. D. Parkinson in the *Educational Review*, which was commented on editorially by The Journal, pointed out the unwisdom of merely emphasizing the dangers of the venereal diseases, and the advisability of education of a positive or constructive type along these lines. It may be of interest to note that the National Institute of Moral Instruction is now preparing an illustrated lecture which will deal in a general way with the subject of sex hygiene along the lines indicated. A number of the most prominent educators and capitalists in the country are interested in this organization, and an endowment fund of $500,000 is being raised to extend the work. A number of illustrated lectures on various topics have been prepared and are being given in various cities, especially in high schools, academies, etc. These illustrated lessons, consisting of from fifty to one hundred lantern slides and a printed, illustrated text, are sent by express from four local distribution centers, Baltimore, Knoxville, Chicago and Berkeley, Cal., to all parts of the United States for use by teachers, principals and superintendents. The lessons are intended for use during school hours, the teacher delivering the text while the pictures are being shown. The importance of a lecture which would thus visualize the importance of sex hygiene, reaching as it would thousands of young men, can scarcely be overestimated. Mr. Milton Fairchild, the able and energetic director of instruction of the organization, is now engaged in the preparation of such a lecture, which he proposes to entitle "A Gentleman's Treatment of Women." As a tentative outline, he plans to present the subject matter under the following heads: 1. The beast in man. 2. The dangers of promiscuity make it the practice of a fool. 3. The degeneration of self-abuse. 4. The manliness and honor of continence. 5. The practice of self-control. 6. Purity of mind and body a preparation for marriage. 7. The ideal marriage. 8. Eugenics. 9. A gentleman's treatment of women.

Without offering any personal criticisms of this outline, I am presenting it, at the request of Mr. Fairchild, to the readers of The Journal for their criticisms and suggestions, which Mr. Fairchild requests be sent to him directly and which he will appreciate very much. His address is 903 Calvert Building, Baltimore.

Emil Novak, Baltimore,
General Secretary, Maryland Society of Social Hygiene.

Thyroidectin in Exophthalmic Goiter

To the Editor:—Having read with interest the article on "Treatment of Exophthalmic Goiter with Thyroidectin" (The Journal, April 22, p. 1176) I desire to report one case. I realize fully that one case proves nothing, but I desire to contribute one instance to the sum of collective observation.

The patient, Miss H., aged about 35, housekeeper, came for treatment Sept. 1, 1910, presenting a typical case of exophthalmic goiter. The pulse-rate was 140; the neck measured 15 inches in circumference; marked protrusion of the eyes was present, with tremor, heart murmurs, systolic thrill over the thyroid, etc. The thyroid gland was the size of an average hen's egg, central and uniform in shape. The patient was given thyroidectin 5 gr. capsules three a day, one after each meal. This was continued to October 10, about six weeks, with no discoverable improvement in any way. On the suggestion of a brother practitioner, I changed to quinin hydrobromid, 5 gr. three times a day, after meals, and after five months of that medication, with occasional interruption of one week, the results are certainly remarkable. No other treatment was given; no suggestions were made in regard to hygiene or mode of life, and the patient continued about her work as before.

About the middle of March the pulse was 80, and the neck measured 13½ inches, the reduction of 1½ inches in circumference being due to the disappearance of the growth, as only a normal thyroid could then be felt; the tremor had disappeared; there were no heart murmurs, or thrill over the neck, as there was nothing to thrill. The exophthalmos, however, still persists, though it is possibly not so marked as before the beginning of the treatment, and I fear that the condition may be permanent. During each of the one-week intermissions of the quinin hydrobromid, the patient would not be so well, and the pulse-rate would increase; but during the first week after resuming the remedy, there would be a marked improvement, more noticeable than during the weeks of continuous administration.

W. F. Wilson, Lake City, Minn.

President Taft on Beriberi Among the Japanese

To the Editor:—There was a rather important clerical error in the typewritten manuscript furnished you for President Taft's speech before the Medical Club of Philadelphia. [The Journal, May 13, 1911, page 1400, middle of first column.] He said, "I need not go further than to say that twenty-four per cent. of the sick of the Japanese army were afflicted with beriberi during the Russo-Japanese War." The words "sick of the" were omitted in this sentence, just before the word "Japanese." It seems to me the error is so obvious that it will not make any great difference, except to certain literal souls who will perhaps write to inquire about it. I am asked to write you in the name of the White House to make the correction, with the statement that it was a clerical error.

J. R. Kean, Washington, D. C.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RECENT LITERATURE ON BONE-GRAFTING

To the Editor:—Please refer me to recent literature on bone-grafting. I have a patient with a part of the tibia lost and I want to insert a bone if possible. Has this been done with success?

J. F. CLARK, Fairfield, Iowa.

ANSWER.—Bone-grafting, bone-transplantation and bone-transference have been successfully employed in a number of cases for the purpose of supplying defects in the long bones.

Huntington (*Ann. Surg.*, xli, 249) and Codman (*Ann. Surg.*, xlix, 820) both report interesting cases of bone-transference in which the fibula was made to supplant a defect in the tibia.

In the article on "Intrahuman Bone-Grafting" (*Ann. Surg.*, December, 1909) Mac Ewen describes a method of grafting small particles of bone to fill in bone defects.

Magruder writes on "Bone-Grafting and Osteoplasty" (*Washington Med. Ann.*, July, 1910, and in *Surg., Gynec. and Obst.*, August, 1910).

Tomita (*Deutsch. Ztschr. f. Chir.*, xc, 247) mentions several cases of bone-transplantations. In one case he successfully transplanted 12 cm. of bone from a calf to fill in a defect of the tibia in a man and in another case he used the femur of a rabbit. These are successful cases of heteroplasty. Several cases of autoplasty or the transference of pieces of the tibia to fill in a defect in the same bone at another point are also reported.

Heller (*Ergebn. d. Chir. u. Orthop.*, vol. i) reviews the whole subject of transplantation and his article contains a bibliography of recent literature on the subject.

PHYSIOLOGIC ACTION AND THERAPEUTIC USES OF COTTON-SEED OIL

To the Editor:—1. What are the physiologic action and therapeutic uses of cotton-seed oil?

2. What is the average dose, the maximum dose, and how often should the dose be repeated?

3. What are the comparative food values of cotton-seed oil, olive oil, and eggs?

J. A. BURNETT, M.D., Marble City, Okla.

ANSWER.—1. Cotton-seed oil has the action of other fats and fixed oils. It hinders to some extent the secretion of gastric juice, and tends to provoke the regurgitation of bile and pancreatic juice into the stomach. In the intestine it undergoes saponification and if in excess is excreted with the feces rendering the passages softer and of a light color.

Therapeutically it may be used in place of olive oil to restrain hyperacidity, allay irritation, and relieve pain in the intestinal canal.

2. The dose is from a teaspoonful to a tablespoonful or more, given with or after meals.

3. Oils consist practically of pure fat, which yields 9.1 calories per gram. Half an ounce of cotton-seed oil or olive oil would yield approximately 135 calories; either is equivalent to one and one-half eggs.

The Public Service

Medical Department, U. S. Army

Changes for the week ended May 13, 1911.

Snyder, H. McC., lieut., ordered to Fort D. A. Russell, Wyo., for duty on completion of examination for promotion.

Phelan, Henry du R., M.R.C., ordered to Fort Barry, Cal., for duty.

Dickenson, C. F., M.R.C., relieved from duty at Fort Barry, Cal., and ordered to Fort Duchesne, Utah, for duty.

Bayley, Edmund W., M.R.C., ordered to Fort Sill, Okla., for duty.

Holmberg, Carl E., lieut., relieved from Presidio of San Francisco and assigned to duty at Army General Hospital, Fort Bayard, N. Mex.

VanHorn, James B., M.R.C., relieved from further duty in the Philippines division and assigned to duty at Army General Hospital, Fort Bayard, N. Mex.

Kendall, William P., lieut.-col., leave of absence extended one month.

Brown, Ira C., M.R.C., ordered to proceed to Fort Douglas, Ariz., for duty in the field.

Freeman, Charles E., captain, assignment to duty with troops for station at Yosemite National Park, Cal., is revoked, and instead assignment to duty at Army General Hospital, San Francisco.

Richardson, William H., captain, assigned to duty with troops from Presidio of San Francisco for station in Yosemite National Park, Cal.

Bayley, Edmund W., M.R.C., ordered to accompany the 55th Company, C. A. C., from San Francisco to Fort Du Pont, Del., on the completion of this duty to proceed to Fort Sill, Okla., for station.

Miller, R. M., captain, granted thirty days' leave of absence.

Long, Charles J., D.S., granted thirty days' leave of absence.

Purnell, H. S., captain, relieved from duty at the Army General Hospital, San Francisco, and ordered to Madison Barracks, New York, for duty.

Medical Corps, U. S. Navy

Changes during the week ended May 13, 1911.

Butler, S. St. J., surgeon, detached from the naval medical school, Washington, D. C., and ordered to the Asiatic station.

Zalesky, W. J., P. A. surgeon, detached from the *Salem* and granted sick leave for two months.

Wheeler, L. H., P. A. surgeon, detached from the *Virginia* and ordered to the *Salem*.

Halsey, W. H., asst.-surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Virginia*.

Ames, M. H., P. A. surgeon, detached from the *Albany* and ordered to the *Helena*.

Dessez, P. T., P. A. surgeon, detached from the *Helena* and ordered home.

Higgins, S. L., P. A. surgeon, detached from the naval hospital, Yokohama, Japan, and ordered home.

Thomas, G. E., asst.-surgeon, detached from the *Saratoga* and ordered to the naval hospital, Yokohama, Japan.

Ohnesorg, K., surgeon, ordered to the Navy Yard, New York.

May, H. A., P. A. surgeon, detached from the naval hospital, Las Animas, Colo., and ordered to duty at the naval medical school hospital, Washington, D. C.

Holloway, J. H., P. A. surgeon, detached from the naval hospital, New York, and ordered to duty and treatment at the naval hospital, Las Animas, Colo.

Woodland, E. E., A. A. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Iowa*.

Dickinson, D., Jr., A. A. surgeon, ordered to the marine recruiting station, Cincinnati.

Kindleberger, C. P., surgeon, detached from the navy yard, Mare Island, Cal., and ordered to the naval station, Guam, M. I.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended May 10, 1911.

Carter, H. R., surgeon, directed to proceed to Cairo, Ill., on special temporary duty.

Banks, C. E., surgeon, granted ten days' leave of absence from May 10, 1911.

Carmichael, D. A., surgeon, granted fourteen days' leave of absence from May 26, 1911.

Williams, L. L., surgeon, directed to proceed to Vineyard Haven, Mass., on special temporary duty.

Geddings, H. D., surgeon, granted one month's leave of absence on account of sickness.

Brown, B. W., surgeon, leave of absence for one month on being relieved by Surgeon F. W. Mead amended to read "nine days from Dec. 6, 1910."

Lumsden, L. L., P. A. surgeon, detailed to attend the annual meeting of the Ohio State Medical Association at Cleveland, Ohio, May 8 to 11, 1911.

Billings, W. C., P. A. surgeon, granted seven days' leave of absence from April 8, 1911, under paragraph 191, Service Regulations.

Salmon, T. W., P. A. surgeon, leave of absence for two months and ten days from Feb. 8, 1911, amended to read "one month and twenty-three days from Feb. 8, 1911, and seventeen days from April 1, 1911, on account of sickness."

Ashford, F. A., P. A. surgeon, granted seven days' leave of absence from April 12, 1911, under paragraph 191, Service Regulations.

Kaplan, M. I., A. A. surgeon, granted seven days' leave of absence from April 12, 1911, under paragraph 210, Service Regulations.

Moorer, M. P., A. A. surgeon, leave of absence for ten days from March 28, 1911, amended to read "twenty-four days from March 28, 1911, on account of sickness."

Porter, Joseph Y., Jr., A. A. surgeon, granted eight months' leave of absence from May 1, 1911, without pay.

Torres, J. F., A. A. surgeon, granted thirty days' leave of absence from May 22, 1911, with pay, and five months' from June 22, 1911, without pay.

Bowie, R. I., sanitary inspector, died at Nagasaki, Japan, April 24, 1911.

Board of medical officers convened to meet at the bureau, May 22, 1911, for the examination of candidates for admission to the service. Detail for the board: Surgeon R. M. Woodward, chairman; Surgeon J. O. Cobb; Passed Assistant-Surgeon W. C. Rucker, recorder.

Strangulated Hernia.—B. B. Davis, in the *Western Medical Review*, emphasizes the following points: (1) decrease of the number of candidates for strangulation by a more general employment of operations for radical cure; (2) operation in all cases in which the hernia is not well retained by trusses, or in which it is otherwise unusually liable to become strangulated; (3) condemnation of prolonged or harsh methods of employing taxis; (4) immediate operation in every case of strangulated hernia that is not quickly reduced by gentle taxis; (5) in cases of gangrene of bowel in the late cases the superiority of resection rather than any of the make-shift procedures so uniformly unsuccessful.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DELAWARE: State Society and Homeopathic, Dover and Wilmington, June 20. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

ILLINOIS: Coliseum Annex, Chicago, June 13-15. Sec., Dr. James A. Egan, Springfield.

IOWA: Capitol Bldg., Des Moines, June 5-7. Sec., Dr. Guilford H. Sumner.

KANSAS: Hotel Grund, Kansas City, June 13. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: The Armory, Louisville, May 31. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: 1211 Cathedral St., Baltimore, June 20. Sec., Dr. J. McPherson Scott, Hagerstown.

MICHIGAN: University Bldg., Ann Arbor, June 13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, Minneapolis, June 20. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

MISSOURI: Gymnasium of St. Louis University, St. Louis, June 12-14. Sec., Dr. Frank B. Hiller, State House, Jefferson City.

NEBRASKA: State House, Senate Chamber, Lincoln, May 24. Sec., Dr. E. Arthur Carr, 141 S. 12th Street

NEW JERSEY: Capitol Bldg., Trenton, June 20-21. Sec., Dr. H. G. Norton.

NEW YORK: May 23-26 and June 27-30. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

NORTH CAROLINA: Charlotte, June 14. Sec., Dr. Benjamin K. Hays, Oxford.

OHIO: Columbus, June 6-8. Sec., Dr. George H. Matson, State House.

PENNSYLVANIA: Regular, Homeopathic and Eclectic, Philadelphia and Pittsburg, June 27-30. Secretary of the Medical Council, Mr. Nathan C. Schaeffer, Harrisburg.

SOUTH CAROLINA: State House, Columbia, June 13. Sec., Dr. A. Earle Boozer.

TEXAS: Austin, June 27-29. Sec., Dr. J. D. Mitchell, Fort Worth.

VIRGINIA: Richmond, June 20-23. Sec., Dr. R. S. Martin, Stuart.

WISCONSIN: Milwaukee, May 24-26. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

WYOMING: University of Wyoming, Laramie, June 6-8. Sec., Dr. J. B. Tyrrell.

Ohio January Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that at the meeting held Jan. 3, 1911, fifteen candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1909)	Illinois
Indiana University	(1910)	Indiana
Tufts College Medical School	(1906)	Maine
Harvard University Medical School	(1906)	New York
College of Physicians and Surgeons, Baltimore	(1910)	W. Virginia
University of Michigan, Department of Medicine and Surgery	(1889) (1906) (1909) (1910)	Michigan
University and Bellevue Hospital Medical College	(1910)	New York
Long Island College Hospital	(1909)	New York
Eclectic Medical College, Cincinnati	(1909)	W. Virginia
Western Reserve University	(1886)	W. Virginia
Laura Memorial Woman's Medical College	(1897)	Michigan
Woman's Medical College of Pennsylvania	(1909)	New Jersey

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Tenth Month—Fourth Weekly Meeting

WOUNDS AND THEIR MEDICOLEGAL RELATIONS

INCISED WOUNDS: Appearances, depth, length, direction, shape. Value as indicator of weapon used.

CONTUSED WOUNDS: Appearances, color changes, character of weapon, degree of force or violence. Relation of local lesion to injury to deeper structures; fractures, ruptured viscera.

PUNCTURED WOUNDS: Character of weapon; size, shape, direction, depth of wounds. Injury to deep structures.

GUN-SHOT AND PISTOL-SHOT WOUNDS: Wound of entrance, shape, size, edges, discoloration, powder burns; variations due to shape and momentum of missile, distance, angle of incidence, and tissues injured. Injury to tissues in track of missile. Injury to muscle, fascia, bones, etc. Deflection of bullet. Foreign substances in tissues. Wound of exit, shape, size, relation to wound of entrance.

LACERATED WOUNDS: Character of weapon or injury. Appearances.

HOMICIDAL, SUICIDAL AND ACCIDENTAL WOUNDS: Situation, usual site in suicide. Nature of wounds, extent and number, direction of wound. Bearing of sex. Position of body. Environment.

DISTINCTION BETWEEN ANTE-MORTEM AND POST-MORTEM WOUNDS: 1. Evidences of free bleeding. 2. Clotted blood about edges of wound, and infiltration of surrounding tissues. 3. Retraction of edges. 4. Swelling and injection of edges. 5. Retraction of sides of wound under skin. Differences in incised, punctured, lacerated, contused and gunshot wounds.

Monthly Meeting

Pistol-Shot Wounds in Their Medicolegal Relations.
Infanticide; Evidences of Live Birth; Cause and Manner of Death.
The Legal Status of the Medical Expert in This State.

NOTE: This completes the course as outlined for the year.

Book Notices

A SYSTEM OF OPHTHALMIC OPERATIONS. Being a Complete Treatise on the Operative Conduct of Ocular Diseases and Some Extraocular Conditions Causing Eye Symptoms. Edited and Partly Written by Casey A. Wood, M.D., C.M., D.C.L., Late Professor of Ophthalmology and Head of the Department, Northwestern University Medical School. Complete in Two Volumes. Volumes I and II. Cloth. Price, $15. Pp. 1824, with 968 illustrations. Chicago: Cleveland Press, 1911.

The extent and comprehensiveness of this work may be realized from the fact that the two large volumes aggregate 1830 pages, and that its composite authorship comprises thirty collaborators. These collaborators include the most distinguished practitioners and authors, and the subjects have been assigned to them so that the whole list of surgical diseases and operations on the eye is covered.

In addition to the chapters on purely technical subjects there is a short chapter on the history of ophthalmic surgery by Mortimer Frank, with brief biographical sketches of the originators of operations in this branch of surgery and of men prominent in the development of ophthalmology. There is also a rather exhaustive chapter on the forensic relations of ophthalmic surgery by Thomas Hall Shastid. Both of these are apropos in a work of this character and are well done by their respective authors.

In a brief review of a book containing the work of so many distinguished ophthalmologists it would be impossible even to mention the excellencies of the work of each; so that with no desire to make invidious distinctions we may comment on certain features of the book. The chapters on minor ophthalmic surgery, the extraction of senile cataract, operations on the retina and orbital operations, by the editor, Dr. Casey Wood, are admirable. The first mentioned chapter at once expands the usefulness of the work beyond the limit of the skilled ophthalmic surgeon and furnishes much information of the greatest value to the general practitioner who must, perforce, treat many minor ophthalmic conditions.

The chapter on the surgery of the ocular muscles by Jackson should afford a feeling of satisfaction to the surgeon. Jackson speaks with the authority of experience, knowledge and judgment in presenting his own views, and at the same time does not slight the work nor the opinions of others.

Cataract, always one of the most important subjects with which the eye surgeon has to deal, is fully covered by Casey Wood, D. W. Greene, Peter Callan and Myles Standish, Greene furnishing a chapter on the intracapsular operation according to the Smith method, maintaining with force that while it may have its shortcomings, as do most other cataract operations, it is entitled to a distinct place in the surgery of cataract. The two chapters by Frank Brawley and A. E. Halstead, the first on the surgery of the sinus conditions affecting the eye, and the other on the surgery of other collateral conditions influencing vision, as pituitary and other brain tumors, or conditions requiring decompression operations, are features of great value. The editor has thus wisely recognized the fact that the limits between general and ophthalmic surgery have, during the past few years, become more and more narrow.

The general plan of the work is the same as that followed in the "System of Ophthalmic Therapeutics," the two volumes before us serving as a supplement to it, and the three comprising a complete system of ocular treatment.

The illustrations are a distinguishing feature of this book, and of themselves raise the work into the ranks of *éditions de luxe*. It can be said without fear of contradiction, that no work on ophthalmic surgery rivals it in this particular. The pictures are almost all original, and effectively assist in elucidating the text.

The editor and also the ophthalmologists of this country are to be congratulated on the completion of this great work. It has its imperfections and errors, but they are few and unimportant as compared with the thoroughness, care and scientific exactness maintained by most of the chapters. This system should be in the possession of every English-speaking ophthalmic surgeon.

Case Histories in Pediatrics. A Collection of Histories of Actual Patients Selected to Illustrate the Diagnosis, Prognosis and Treatment of the Most Important Diseases of Infancy and Childhood. By John L. Morse, A.M., M.D., Assistant Professor of *Pediatrics, Harvard Medical School. Cloth. Price, $3. Pp. 314,* with illustrations. Boston: W. M. Leonard, 1911.

In this book the author presents the case histories of 100 actual pediatric cases from his practice, which cover fairly completely all the important diseases of children. These cases are classified systematically, as in any text-book, in the table of contents, for easy reference. In the text the history and physical examination are given first, and the diagnosis follows in heavy type after the clinical evidence is weighed. The prognosis and treatment follow. The reader can thus take up each case as a new patient that presents himself for diagnosis without knowing the diagnosis in advance. This method of teaching from case histories has been in use at Harvard for ten years and commends itself to Morse as "almost as valuable as the clinical lecture in which the patient is shown," and as "surpassed only by bedside instruction to small groups of students." His favorable experience with this method of teaching both graduates and undergraduates has led him to feel that "there was need for the utilization of this method for the presentation of the subject of pediatrics to the practitioner." The book is written in Dr. Morse's well-known direct and vigorous style and makes interesting and profitable reading to any one interested in the diseases of children.

History of the Mississippi State Medical Association. With Biographies of its Presidents, Complete Roster of its Officers, Programs of its Meetings, and the Past and Present Laws Relating to the Practice of Medicine in Mississippi. Cloth. Pp. 171. Dr. E. F. Howard, Secretary, 506 First National Bank Building, Vicksburg, Miss., 1910.

This book was written because the secretary of the Mississippi State Medical Association when he entered on the duties of the office found "an entire absence of records." "There was not even a file of the official transactions, due to the fact that at least twice the secretary's office had been wiped out by fire." Finding it impossible for the Mississippi State Medical Association to obtain a complete set of transactions, Dr. Howard undertook to abstract the items that appeared to him to be of particular interest from copies which he was able to borrow. These abstracts have been made the basis of this history. Along with the history of the association are the other documents named in the title. Possibly this book will suggest to other state associations the desirability of similar work.

The author acknowledges that the book is by no means complete or perfect. Important events in the society's history must have escaped his knowledge. When the members have offered their constructive criticism, a second edition, revised and *enlarged, might be written.*

The Ninth Year-Book of the National Society for the Study of Education. Part II, The Nurse in Education. By Thomas D. Wood, A.M., M.D., Professor of Physical Education, Teachers College and Columbia University; M. Adelaide Nutting, Professor of Nursing and Health, and of Household Administration, Teachers College, New York City; Isabel M. Stewart, Instructor in Nursing and Health, Teachers College, New York City, and Mary L. Read, B.S. Supplement to the Year-Book on "Health and Education" Discussed at the Indianapolis Meeting of the National Society, Feb. 28, 1910. *Paper. Price, 78 cents. Pp. 76.* The University of Chicago Press, Chicago.

The second part of the Ninth Year-Book of the National Society for the Study of Education deals with the nurse and contains, beside an introduction by Dr. Thomas D. Wood and a valuable bibliography, two papers: one on "The Educational Value of the Nurse in the Public School," by Isabel M. Stewart, and one on "Professional Training of Children's Nurses," by Mary L. Read. The first paper emphasizes a function of the trained nurse which has not been generally considered. The value of the properly trained nurse to the physician, to the hospital and to the patient has been repeatedly discussed, but the educational value of the nurse to the public has been given comparatively little attention. The paper is an opportune one in view of present-day developments along this line.

Principles of Public Health. A Simple Text-Book on Hygiene Presenting the Principles Fundamental to the Conservation of Individual and Community Health. By Thomas D. Tuttle, M.D., Secretary and Executive Officer of the State Board of Health of Montana. Cloth. Price, 50 cents net. Yonkers-on-Hudson, N. Y.: World Book Co., 1910.

This little book is the fourth one of a series issued for use in the public schools. While necessarily elementary, it is so written and illustrated as to interest and instruct the child. The book in the main is excellent, although one might wish that such illustrations as the one on page 64 showing "the effect of cigarette smoking" had been omitted.

Miscellany

CLIPPINGS FROM LAY EXCHANGES

Another Group of These Popular Quotations

MUST HAVE HIT HIM IN THE NECK

"He escaped with a sprained ankle, which is remarkable, as the machine struck him between the lamp and the radiator."—Sibley (Ia.) *Gazette.*

WILL IT ALSO MILK THE COW?

"The V.... Pharmacy . . . has been named as a supply station for antitoxin. . . . The antitoxin will be used in cases of diphtheria, to prevent blindness in newly born babes, for throat cultures and in the examination of blood in typhoid and malarial cases."—Cleveland *Plain Dealer.*

SOUNDS AS THOUGH SHE WOULD MISS WEDNESDAY TOO

"Miss B.... W.... was unable to attend to her school duties Monday and Tuesday on account of an attack of cerebral cusa."—Roundup (Mont.) *Tribune.*

FORTUNATELY HIS LEFT RIB ESCAPED

"While cranking his automobile, T.... C.... sustained what is technically known as a Colles fracture of the right rib."—San Francisco *Chronicle,* Feb. 2, 1911.

NO TROUBLE FOR AN OSTEOPATH

"Dr. C. D. V...., the osteopath . . . witnessed an operation while at Kirksville. The operation consisted in the removal of part of the spinal column of a man who was paralyzed. . . . He came out from the operation all right and the physicians all thought he would get well without any trouble."—Atlantic (Ia.) *Telegraph,* Jan. 5, 1911.

INTERNATIONAL GAS FACTORY

"Dr. W. H. W...., the Philadelphia physician decorated by the Kaiser, was already the one American doctor who enjoys the distinction of having a bacillus named for him. And the Bacillus Welchii is the gas bacillus dwelling in the international track."—Boston *Record*, April 8, 1911.

THE BLIND LEADING THE BLIND

"Dr....., on account of failing eyesight and nervousness, has concluded to abandon dentistry and take up optics. He has already partly completed a college course."—Johnstown (Pa.) *Daily Democrat*.

BROKE HIS KNOB—AND THEY SAY THERE'S NO REMEDY

"Mr. F. P. B.... who was injured . . . by stepping from a moving train, was examined by a specialist in Columbus last Monday; and it was found that the knob, on the end of the bone that worked in the socket at the hip joint, was broken from the bone, and that no operation could remedy the injury." —*Marion County Patriot*, Buena Vista, Ga.

A NEW SYNONYM—SOUNDS ODD, BUT CERTAINLY IS DESCRIPTIVE

"Alice H...., an' English actress, died suddenly of optical goiter at Roosevelt Hospital, New York."—*Dramatic Mirror*.

FANCY COLORED FITS

"Three surgeons were called to prove that he would always be a sufferer from chromatic epilepsy."—Erie (Pa.) paper.

ABERRATIONS

"The cause of death was given as shock and acute lumbar pneumonia following six gunshot wounds."—Chicago *Record-Herald*, Jan. 25, 1911.

"Dr. W. R. M...., is recovering from an operation for rhynophima, or 'big nose,' at the Protestant Hospital."—Cincinnati *Post*, March 7, 1911.

"Mrs. M.... died yesterday of diabetes mylitis."—Worcester (Mass.) *Telegram*.

ODD STATEMENTS IN PREVIOUS HISTORY

Naturally, applicants for life-insurance may be expected to put as good a face as possible on the reports concerning relatives and the causes of their deaths, but they sometimes make rather amusing statements. Some one has collected a few of these which were originally published in the *British Medical Journal*.

> "Mother died in infancy."
>
> "Father went to bed feeling well, and the next morning woke up dead."
>
> "Grandfather died suddenly at the age of 103. Up to this time he bid fair to reach a ripe old age."
>
> "Applicant does not know cause of mother's death, but states that she fully recovered from her last illness."
>
> "Applicant has never been fatally sick."
>
> "Applicant's brother, who was an infant, died when he was a mere child."
>
> "Grandfather died from gunshot wound, caused by an arrow shot by an Indian."
>
> "Applicant's fraternal parents died when he was a child."
>
> "Mother's last illness was caused from chronic rheumatism, but she was cured before death."
>
> "Father died suddenly; nothing serious."

There is a delightful innocence about some of these. Take the last, for example. This has a western flavor, as though the applicant appreciated father's having made little fuss about it. When the time came he simply went, that was all.

Vaccination.—In Manila, during Spanish times, there were so many deaths from small-pox that it was necessary to erect in that city a large temporary hospital for the victims, most of whom died. During the last five years no one who had been successfully vaccinated during the five previous years has died in Manila. No one at all has died there since June, 1909. In large cities, and in localities which are easily accessible, the disease is now mild. Owing to a combination of circumstances vaccination, which was begun twelve years ago by the American sanitary authorities, was suspended in Bagac during a period of nine years. A bad epidemic broke out, but when vaccination was begun again no new cases occurred. The official reports from the islands make a very strong document in support of the benefits of vaccination. By the way, the Republicans put a National Bureau of Health into their platform and then took no interest in the subject. The president was enthusiastic about it for a little while and then apparently forgot it. Will the Democrats, who also put it in their platform, pay a little attention to it next winter? A passenger was standing outside the door of a Pullman sleeper when the porter asked him to come inside. "I thought a platform was meant to stand on." "Oh, no, sah, a platform is meant to get in on."—*Collier's*, April 22.

Medicolegal

Poisoning from Ivy Not "Taking" of Poison, But Death Therefrom is Accidental—Visible Marks

The United States Circuit Court, in Minnesota, says that the insured in the case of Dent vs. Railway Mail Association (183 Fed. R. 840) went with his wife to the outskirts of the city of St. Paul, where he, leaving her, walked into some adjacent woods and there cut a branch of oak and a little stick, which he brought back to her. Within a day or two he called her attention to a discoloration between the fingers of his hand which subsequently turned into an eruption that spread to his arms, neck and chest. This eruption progressed and in the latter part of the month he called on a physician who prescribed for him. His condition grew worse, until his death, which the undisputed evidence showed was caused by poison ivy.

He was insured by the association, but its constitution provided: "Nor shall any benefit be paid where death or disability results from voluntarily inflicted injuries, be the member sane or insane; nor from poison or other injurious matter taken or administered accidentally or otherwise." However, the court is very clearly of the opinion that, when it is considered that the word "taken" is used in connection with the word "administered," and that they are both used in connection with the words "accidental or otherwise," it does not include such a case as this one. It must have been an internal taking, and that taking must be the effect of an act voluntary or involuntary of the person injured.

The court thinks that it would shock the ideas of justice of us all to hold that this policy did not include a death by the bite of a poisonous snake. If anything could be considered an accident, that would be so considered, and there is no reason why this association should not pay for such a loss and should not be willing to do so. The clause quoted was undoubtedly inserted to exclude a case of suicide. It was intended to cover such a case, and exempt the company where death resulted from the taking of the insured's own life by the administration of poison by himself; or perhaps to cover such a case as the one in Wisconsin, in which a dentist administered some poisonous substance to his patient.

The next question was whether the circumstances proved in this case showed an accident, and the court thinks that they did, holding that the taking or catching of this poison by cutting the shrub or bush was an accident, and that it came within the terms of the policy.

Nor does the court think that the association could be relieved by reason of the provision in the policy that, "No benefit or sum whatever shall be payable in any case whatever, unless the accident alone results in producing external marks of injury or violence suffered by the body of the member." This does not say when the visible marks must be produced, and it seems to the court that it must be held that it is complied with if such visible marks appear afterwards, though of course it must be established to the satisfaction of the court or jury that those visible marks were the result of the accident. So, if it was established to the satisfaction of the court or jury that these visible external marks were the result of the injury, the fact that they did not appear instantly was not a defense to the suit on this policy of accident insurance.

Dr. Robert [illegible]

Society Proceedings

COMING MEETINGS

American Medical Association, Los Angeles, June 27-30.

American Assn. of Genito-Urinary Surgeons, New York, June 1-3.
American Academy of Medicine, Los Angeles, June 23-26.
American Dermatological Association, Boston, May 25-27.
American Climatological Association, Montreal, Canada, June 13-14.
American Gynecological Society, Atlantic City, May 23-25.
American Laryn., Rhin. and Otol. Society, Atlantic City, June 1-3.
American Laryngological Association, Philadelphia, May 29-31.
American Medico-Psychological Association, Denver, June 19-20.
American Otological Society, Atlantic City, June 26-27.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Proctologic Society, Los Angeles, June 26-27.
American Surgical Association, Denver, June 19-21.
Conf. of Bds. of Health of N. America, Los Angeles, June 30-July 1.
Connecticut State Medical Society, Hartford, May 24-25.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maine Medical Association, Augusta, June 28-29.
Massachusetts Medical Society, Boston, June 13-14.
Nat'l Assn. for Study and Prev. of Tuberculosis, Denver, June 20-21.
National Association for Study of Epilepsy, St. Louis, June 16.
New Jersey, Medical Society of, Spring Lake, June 13-15.
North Carolina, Medical Society of State of, Charlotte, June 20.
Rhode Island Medical Society, Providence, June 1.
Wisconsin, State Medical Society of, Waukesha, June 7-9.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND

One Hundred and Thirteenth Annual Meeting, held at Baltimore, April 25-27, 1911

The President, Dr. Franklin B. Smith, Frederick, in the Chair

A list of officers elected was published in The Journal, May 13, p. 1396.

A resolution was adopted providing for the appointment of a committee of five to investigate and report on conditions surrounding the care of inebriates in the state, with the view of obtaining such legislative measures as may seem warranted.

A resolution was adopted reciting that, since the completion of the Panama Canal without serious mortality from epidemic and endemic diseases will be a signal triumph of the appreciation of scientific discoveries in the field of preventive medicine, the opening of the canal should be marked by conspicuous recognition of these and kindred services of preventive medicine in the advancement of human welfare and the reclamation of tropical regions to civilization, and that such recognition may be secured and such an occasion fittingly commemorated by the holding of an international congress of tropical medicine.

The Profession of Medicine and Its Relation to the State

Dr. Franklin B. Smith, Frederick: In matters of public interest, such as health and sanitation, pure food, education and the conservation of mental and physical resources, medical men should lead and dominate the laity. Our practice is too continuously on the individual. It should take a wider range, grasp greater subjects, such as pertain to the protection and elevation of society, subjects embracing the prevention of disease and the best means of overcoming ignorant opposition. The value of experimentation on living man and on the lower animals is so evident that it is incompatible with our ideas of good education and common sense to deny it; but, on the other hand, under the present development of modern civilization, no preventable pain, cruelty or torture to either man or animal can be tolerated. Therefore the sensible—not the fanatic—opponents of vivisection may be met squarely and convinced of its necessity and its benefits, while the reasonable prejudices and fears of humane people may be allayed by such restrictions as will make it a certainty that these experiments are never unnecessarily performed or needlessly painful.

Other professions, educators and workers interested in the welfare of the state must be drawn into their proper relation to us and such mutual cooperation secured as will bring about harmonious but well-rounded and developed schemes of advancement. Organized charity, public and private, education and general economics, all offer more inviting fields of usefulness and glory as specialties for the progressive medical man than the overcrowded ranks of surgery, obstetrics, gynecology and even general practice. The subject of the control of the evils of intemperance by restriction of the manufacture and sale of the so-called intoxicants has been before the public for a long time. Much time, money and energy have been spent by able and earnest men known as prohibitionists, advocates of high license, antisaloon leaguers and pledge enthusiasts. Our profession has never taken the part it should take in this question of vast economic importance. This matter has been treated as a religious or political question, or else as one of morals or economics. While in reality it is all of these, in its more essential aspects it is, above all, a medical question.

In the administration and disbursement of its public charities, however, the state needs counsel more than in any other of its departments. In these matters the members of the medical profession are directly interested both as medical men and as citizens. Public money should be disbursed only for value received. Commissions should be appointed because of the merit and fitness of their members rather than because of their political records and influence. The licensing or chartering of hospitals should be entrusted to this sort of control, with power to prescribe the standard of equipment and service without which they could not lawfully prosecute their work. Our efforts should be for higher standards of attainment for our profession, a more general and more discriminative education of the laity in medical matters, greater influence by means of better men on our state boards, a general standardization secured through organization and through the representatives of our national association, cooperation and agreement leading to uniformity of state legislation, rather than the enactment of national laws.

The annual oration was on "Phylogenetic Association in Relation to Exophthalmic Goiter and Sexual Neurasthenia," by Dr. George W. Crile, Cleveland, Ohio.

The Tonsil Question

Dr. H. E. Peterman, Baltimore: There is much difference of opinion as to the physiology and functions of the tonsils. It is my belief that the tonsils perform an important function in childhood, and I seldom perform a tonsillectomy in children under 6 years of age, unless there is some special condition demanding it. Tonsillectomy should always be classed as a major operation, because it is usually necessary to give a general anesthetic, and also because of the fact that severe hemorrhage is often encountered and in this region is difficult to control. When the patient is an adult and not of the nervous type, it is easier and more satisfactory to perform the operation under local anesthesia. The operation should always be done in a hospital. When a general anesthetic is used, ether should always be chosen, unless there is some special contraindication. The key to the successful enucleation of the gland consists in getting properly started under the capsule or between the capsule and the parts beneath. The dangers of the operation are hemorrhage, injury of the muscular structures surrounding the tonsils and infection of the wound.

Dr. Wilmer Brinton, Baltimore: I am glad that Dr. Peterman does not advocate the wholesale removal of tonsils which is practiced by a good many men, for it is quite certain that there will sooner or later be a reaction against this practice, just as there has been against the indiscriminate removal of ovaries.

Case of Pneumococcus Peritonitis

Dr. Harvey G. Stone, Baltimore: The patient, a female child, 5 years old, had pneumonia two years ago, complicated by acute otitis media. After recovery from the pneumonia the otitis persisted and became chronic, with frequent exacerbations of earache and discharge. On March 30, following an indiscretion of diet on the previous evening, she was seized with sudden severe abdominal pain and vomiting, fever and diarrhea. The fever and pain, which was generally distributed over the abdomen, but most acute over the umbilicus, persisted, as did the diarrhea, in spite of calomel. There was slight symmetrical distention of the abdomen in the lower half. There was no localized tenderness and no masses were felt. On opening the abdomen thick greenish-yellow pus welled out. The pus was odorless. No lesion accountable for the infection could be found. The bacteriologic report of the pus examination showed pneumococci. In spite of the Fowler position, Murphy treatment, etc., the child died the day after the operation. No autopsy was secured.

(To be continued)

MISSISSIPPI STATE MEDICAL ASSOCIATION

Annual Meeting, held at Jackson, April 10, 1911.

(Continued from page 1414)

A Case of Empyema

DR. ROBERT DONALD, Hattiesburg: In this case, the patient, who was a child whose illness in the beginning simulated malaria, was given antimalarial treatment. Later, an incision was made and drainage instituted. On removal of the tube on the ninth day the cavity refilled and drainage was again instituted, with satisfactory results.

DISCUSSION

DR. J. W. BARKSDALE, Winona: I do not think it necessary to insert a very long tube. All that is necessary is that the tube project into the pus cavity.

DR. S. S. CAROTHERS, Duck Hill: How much quinin was given the child? The case may have been a mild one of pneumonia.

DR. J. T. LONGINO, Jonestown: The cause of the trouble is bacterial infection. If a microscopic examination had been made several bacteria would have been found playing a part in this infection. I am very much opposed to attributing the cause to quinin.

Report of a Case of Ophthalmia Neonatorum and a Case of Hereditary Syphilis

DR. I. W. COOPER, Newton, reported a case of ophthalmia neonatorum and one of hereditary syphilis and their treatment as texts for a discourse on the problem presented by venereal diseases and the duty of the medical profession to attempt their prevention.

DISCUSSION

DR. S. A. MAJURE, Dixon: I want to speak on the point of legislating against promiscuous marriage. Young girls, their mothers not thinking of any trouble, have been allowed to marry men who have been loose in their habits. A life of misery follows.

DR. L. C. FEEMSTER, Nettleton: I think that it would have been better to use the argyrol in a 50 per cent. solution. When we first began to use this drug we used only 10 per cent. But now we do not use less than a 25 to 50 per cent. solution.

DR. R. D. SESSIONS, Natchez: I have been very much disappointed in the use of argyrol. I am much better pleased with nitrate of silver and I believe that it will accomplish more than the use of argyrol. It is the duty of the obstetrician to carry argyrol or nitrate of silver with him; 90 per cent. of the blind children in the asylums are there on account of gonorrheal ophthalmia. Let us prevent it.

DR. ROBERT DONALD, Hattiesburg: I generally carry 50 per cent. argyrol. Dr. Sessions has not had success with it in every case. I also make use of a boracic acid solution.

DR. R. S. CURRY, Columbus: A continuous application is necessary and the strength of the solution is not so important as its continuous use. As good a result is obtained with a 10 per cent. solution if it is applied frequently.

DR. I. W. COOPER, Newton: I now use as strong as 50 per cent. solution.

Some Intestinal Parasites of North Mississippi

DR. L. KOHLHEIM, Guntown, has encountered 327 cases of intestinal parasites in North Mississippi in the past four years. These he classified as follows: *Necator americanus* 269, *Ascaris lumbricoides*, 21; *Oxyuris vermicularis*, 15; *Strongyloides intestinalis*, 5; *Hymenolepis nana*, 17. He touched briefly on prophylaxis and treatment and made a strong plea for an educational campaign as the only means of eradicating these pests.

Acid-Fast Bacteria and Some of Their Points of Difference

DR. L. HART, Meridian, described various methods in the differentiation and cultivation of acid-fast bacteria. He contended that the smegma and leprosy bacilli cannot be differentiated by the animal inoculation test.

DISCUSSION

DR. GUSTAV MANN, New Orleans: I can hardly agree with the author that we cannot grow the leprosy bacillus. Professor Duval has shown that leprosy bacilli will grow in ordinary goldfish.

DR. J. G. GAITHER, Oxford: Within the last year series of experiments were conducted in two cities, New York and Philadelphia, I believe, and in one city they used acid-fast bacteria but not in the other. In those which showed the bacteria ordinary running water was used but when distilled water was used no bacteria were found.

DR. H. B. WOOD, Jackson: Rosenberger has been exceedingly careful in his work. I think he is correct. When he and his associates found tubercle bacilli they were using distilled water. They got this distilled water from a demijohn. Rosenberger asserts that he has never seen tubercle bacilli which do not stain.

Microscopic Findings in the Diagnosis of Uncinariasis

DR. W. S. LEATHERS, Oxford: There are various reasons why the hookworm has not been noticed in the South until recent years. Its prevalence is practically universal. From investigations by the Mississippi State Board of Health in fifteen counties and two institutions it is to be inferred that Mississippi has a large proportion of infected inhabitants. Microscopic examination of feces should be a routine procedure in general practice.

The Limitations of a Laboratory

DR. H. B. WOOD, Jackson: A laboratory is a place of consultation and the diagnosis made there should not be considered as obviating the necessity of clinical observation. A negative diagnosis should not be interpreted "non-existent" but "not found." Some causes of failure to diagnose in the laboratory are due to faulty technic.

Pathology of Acute Malarial Infection

DR. C. R. GARRAWAY, Brandon, described the blood changes due to malarial infection and indicated briefly the theories as to the causation of fever in malaria.

DISCUSSION

DR. J. T. LONGINO, Jonestown: The internal organs probably undergo some changes as a result of damage done by malarial parasites, due to pathologic changes of the blood. The collection of all this waste matter in the organs causes anemia and consequently enlargement of these organs.

Physiology of the Thyroid

DR. A. M. HARRELSON, Newton: A perfect secretion of the thyroid is necessary for the proper development of bone and fat, for the proper functioning of the skin and the development of many functions of the body. It is perhaps the best understood of any of the ductless glands.

Cardiac Stimulants

DR. S. A. EGGLESTON, Lexington, has small faith in any cardiac tonics save digitalis and rarely uses any of them except in presence of some absolute contra-indication of that drug. He described the physiologic effects of and indications for digitalis, comparing it, point by point, with the other cardiac stimulants.

DISCUSSION

DR. R. E. HOWARD, Durant: We are not perfect diagnosticians. Various cardiac troubles frequently give the same symptoms. No drug that we have equals digitalis in these cases, but we must be very careful in using digitalis.

A Forgotten Use of Calomel

DR. S. MYERS, Vicksburg, called attention to the diuretic effect of calomel and the almost universal ignoring of this action of the well-known drug by the latest text-books. He gave some case reports showing this effect.

DISCUSSION

Dr. B. H. Booth, Drew: The use of calomel is not forgotten in the Delta. We can always depend on calomel, it is almost magical in its results.

Dr. P. R. Brown, West Point: In my practice I have had no remedy which gives me the same results as calomel. There are some cases in which calomel is the remedy *par excellence.*

Dr. S. Myers, Vicksburg: I know that this remedy is not forgotten in the Delta. It is, however, absolutely forgotten in the teaching in the medical schools. It was with the intention and hope of calling attention to this invaluable drug that I wrote the paper.

Iritis

Dr. M. H. Bell, Vicksburg: In this disease treatment gives a good eye and no treatment frequently results in blindness. Symptoms are severe pain, worse at night, redness of eye, contracted and sluggish pupil, blurred vision and lacrimation. The causes are syphilis, rheumatism, trauma, etc.; in the negro race syphilis causes 80 per cent. of cases. Treatment consists in use of atropin, dionin, Arlt's ointment to forehead, leeches to temple and appropriate general treatment directed to the cause if that can be ascertained.

DISCUSSION

Dr. H. D. Bruns, New Orleans: There are three classes of acute inflammation of the iris with which each of us should be familiar: conjunctivitis, iritis or glaucoma. If it is a case of iritis the pain will be greater than if it is conjunctivitis. The other eye must be well covered. If the person has an equally painful eye with discharge, that is conjunctivitis. If atropin be put to the eye in a mild conjunctivitis it is of no avail.

Dr. W. L. Howard, Greenville: An extremely red eye is an indication of iritis.

Dr. R. E. Howard, Durant: After one makes a diagnosis of iritis it is necessary to decide whether it is caused by syphilis or rheumatism. In the majority of cases it seems to be due to syphilis.

Glaucoma and Its Recognition by the General Practitioner

Dr. Henry Dickson Bruns, New Orleans: Glaucoma is divided into the violently painful, acute type and the simple, non-inflammatory type, with other cases presenting symptoms not wholly of either type. In an acute attack, the patient is alarmed, often awakened by violent pain in the eye, not relieved by the usual domestic remedies. The symptoms are a "raw-meat" red globe, steamy cornea, shallow anterior chamber, dilated pupil, sluggish iris and stony hardness of the eye-ball as compared to the normal eye when tested by fingers applied to the upper lid. The eye will be blind or nearly so. No one who cannot compare tension of two eyes should use atropin in an eye. Fatal mistakes are made in these cases through lack of knowledge and by haste, taking the word of the patient that it is neuralgia or seeing a red eye and concluding that it is iritis. No neuralgia ever made an eye more than slightly pink and an acute iritis does not cause dilatation of the pupil. The family physician is the one who sees these cases at the time that treatment can be beneficial, hence the importance of his making a correct diagnosis. A few hours' delay means hopeless blindness. Though these attacks appear so suddenly in most cases premonitory symptoms have usually passed unnoticed for varying periods. In simple glaucoma the burden lies entirely on the ophthalmologist and at the beginning it will at times be impossible to state definitely that we are dealing with glaucoma until the eye has been under observation for awhile. This type of glaucoma has been found common in the negro race. The treatment is iridectomy and miotics.

DISCUSSION

Dr. R. S. Curry, Columbus: It is important that we recognize the condition early. Atropin is the most dangerous thing for the glaucomatous eye. The dilated pupil and the contracted pupil ought to be sufficient to make us distinguish clearly between iritis and glaucoma. Iridectomy will relieve the pain, and I am very much in favor of this procedure even if the patient is blind. The pain is very acute.

Dr. J. B. Bullitt, Oxford: The general practitioner generally ignores the eye; and the conditions in Mississippi are in some respects unfortunate because there are so few ophthalmologists.

Dr. N. A. McLeod, Brookhaven: I wish to propose a vote of thanks for the paper because I think we all feel indebted to Dr. Bruns.

The motion was seconded and carried.

Dr. H. D. Bruns, New Orleans: It is impossible for any man to say much original about glaucoma. The only point that has any originality about it is the observation relative to the negro being especially liable to glaucoma.

Treatment of Postpartum Hemorrhage

Dr. T. H. Seay, New Hebron: This condition may occur after any labor and many of the predisposing causes may be overcome if treated during pregnancy. Treatment is massage, an intra-uterine douche of acetic-acid solution and packing, combined with such general measures as elevation of the foot of the bed, and ergot hypodermatically.

DISCUSSION

Dr. J. H. Cook, Laurel: I visited a patient who had been under the care of a midwife of much experience, who, however, failed to deliver the placenta. She let the patient die. We should not sit by and let a patient bleed to death in these cases. I believe that strychnin is all right in the after-treatment. I have had success with the use of 1/30 or even 1/60 grain of this drug.

Dr. W. M. Turnage, Marksville: We ought to get rid of midwives in the state of Mississippi.

Dr. T. J. Brown, Grenada: What is the purpose of leaving the placenta in the uterus for thirty minutes? My experience has been that if this were done the patients would all have been dead.

Dr. S. W. Purifoy, Yazoo City: I have seen but one such patient die. I am in favor of delivering the placenta very quickly after birth of the child.

Treatment of Aneurysms

Dr. S. W. Johnston, Vicksburg, reported several cases of aneurysm in which he had operated by the Matas method, the most interesting being one of the abdominal aorta.

DISCUSSION

Dr. L. D. Dickerson, McComb City, told of the pain he got in his fingers using pressure for the cure of aneurysms in his college days.

Dr. J. A. Crisler, Memphis, Tenn.: Let us remember that aneurysms may not pulsate.

Dr. J. G. Gaither, Oxford: I likewise have seen cases in which there was no pulsation.

Dr. W. B. Johnson, Greenville: The smallest and best material for these sutures seems to be Japanese silk.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fifth Annual Meeting, held at Albany, April 18-19, 1911

(Concluded from page 1416)

Significance and Therapy of High Blood-Pressure

Dr. J. F. Rooney, Albany: In summing up, one may say: First, the utility of the vasodilators is conversely apparent with the acuteness of the pathologic condition. Second, eliminative measures, hot air, carbon dioxid baths and catharsis, are of much more marked effect in the toxic group. Third, phlebotomy is of great service in the acute toxic group, accompanied by dilatation of the heart, but has fallen into undeserved disuse. Fourth, blood-pressure determinations alone cannot differentiate between the crises of tabes and intra-abdominal perforations. Fifth, the effect of nitroglycerin is as prolonged as that of any of the nitrite group except erythrol tetranitrate, and that its rapidity of action is as great as any and nearly as great as that of amyl nitrite. Sixth, the use of the aconite group as vasodilators is pharmacologically unfounded, and except in the toxemia of pregnancy with a strong heart muscle should be entirely discontinued.

Hydrotherapeutic Treatment of Chronic Disease of the Heart

Dr. John M. Swan, Watkins: In treatment of chronic diseases of the heart, following the lead of the German and French physicians, particularly those at Nauheim, the value of carbonated brine baths has become a matter of common use. In many hospitals and hydrotherapeutic institutes in the large cities, artificially prepared brines charged with carbon dioxid are used in treatment of cardiac diseases with much benefit. At Glen Springs a natural brine is used in treatment of these diseases. The baths are given on alternate days, so that the complete cure requires six weeks. The carbonated brine baths in suitable cases of cardiac disease produce the following effects: (1) a diminution in the size of the heart; (2) a slowing of the pulse; (3) a slowing of the respiration; (4) reddening of the skin on account of the dilatation of the smaller blood-vessels in the cutis vera; (5) reduction in the size of a congested liver; (6) increased flow of urine. These results are due undoubtedly to the influence of the baths on the cutaneous circulation. The amount of blood in the skin is increased, the blood-vessels of the skin are enlarged in caliber, and as a result the heart is relieved of impediments in satisfying the demand of the circulation, so that the blood-flow is equalized in the viscera.

DISCUSSION

Dr. L. F. Bishop, New York: I am thoroughly convinced of the value of the Nauheim method of treatment with baths, but I hesitate to recommend this method at home without being perfectly sure who is going to give it. I make the latter statement because there are a great many physicians who do not give the treatment in suitable cases. This treatment is not specific; it is the adaptation of a great many different things to bring about a result. In severe cases of arteriosclerosis the carbonic acid gas in the bath is better left out. There is more carbonic acid bath in one artificial bath given by some physician in America than there is in a dozen such baths given at Nauheim.

Dr. H. Schoonmaker, Clifton Springs: The question of prescribing the Nauheim treatment is an important one to the individual. We must select the cases. We must know what the conditions are. I like the term Nauheim method rather than Nauheim baths because the scheme involves much more than the baths. It will be helpful when the actual results of the so-called Nauheim method can be determined irrespective of other treatments, because we have to admit that our patients are under a very careful regimen of rest and diet, etc.

Olive Oil in Postoperative Nausea

Dr. C. R. Hyde, Brooklyn: The use of olive oil to lessen and even control postoperative nausea has not received the attention of surgeons that its success warrants. Just as the patient is beginning to return to consciousness, 2 ounces of ordinary olive oil are administered by mouth from a cup. The patient must be sufficiently out from the ether to understand the command to drink the oil, which is then swallowed without any difficulty. It is of interest to note that after regaining complete consciousness the patient does not even recollect taking the oil. Usually within five minutes after the oil has been given, there is free and copious vomiting, which in the large majority of cases concludes the gastric disturbance. The nurse who gives the oil should be instructed to have at hand a basin and towels, and to remain by the bedside of the patient, as the vomiting which is initiated very soon after the ingestion of the oil is explosive and projectile in character. This precaution is imperative, as some patients will vomit with such a violent expulsive effort as to soil the floor for some distance around the bed. Rarely does a second vomiting attack occur, and within a short time the patient is resting comfortably, so far as the stomach is concerned, and is free from nausea or retching. The method insures a quick, rapid stomach cleansing, usually terminating with this one performance, and should be used as a substitute for gastric lavage on the operating table before the patient is returned to the recovery room or bed.

Surgical Treatment of Exophthalmic Goiter

Dr. Martin B. Tinker, Ithaca: The symptoms of goiter are the symptoms of poisoning, similar to that produced by narcotic poisoning. The excessive secretion acting as a poison is produced by the thyroid. In removing a portion of the thyroid we remove the cause of the trouble. The over-use of tobacco causes tachycardia and weakness of the heart's action, not at all unlike the condition seen in hyperthyroidism. Excessive use of tobacco also causes nervousness, general unrest, tremor, sleeplessness, sometimes nausea, vomiting and diarrhea. The presence of excessive thyroid secretion in the circulation has a similar effect.

No sensible man would consider it logical to treat tobacco heart or tobacco amblyopia and allow his patient to continue the excessive use of tobacco. It is just as logical to treat exophthalmic goiter with drugs without removing the source of the excessive secretion. No one, whether internist or surgeon, is so radical as to suggest operation in all cases. Osler's advice that surgical treatment should be recommended after three months' careful medical treatment, if the patient is not better, if it were generally followed, would save many lives and restore to efficiency many patients who do not die. Operation should certainly be advised before irreparable damage has resulted to important vital organs. The greatest strain comes on the organs of circulation and the nervous system, but almost every important vital organ suffers in advanced cases. With careful preliminary study of the patient to determine how much can be done with safety, dividing the operation into several short stages of two days or even weeks apart, with operation under local anesthesia, or in some cases nitrous oxid anesthesia, the operative risk can be reduced to a minimum. In 150 consecutive operations, without fatality, many of the patients were in extremely bad condition. With three exceptions, every patient who has appeared for operation has been operated on. The three patients who were refused operation all died medical deaths in periods ranging from twenty-four hours to three weeks of the time when they were seen. Dangers of delay and frequency of recurrence of symptoms in serious form were mentioned.

DISCUSSION

Dr. W. W. Skinner, Geneva: I agree with Dr. Tinker with reference to the surgical treatment of these patients, and I hope he will teach what he has set forth in his paper until physicians cease holding these patients in bondage, allowing destructive changes to go on in the body, as has been shown by microscopic sections, until they are absolutely useless members of the community.

Dr. Parker Syms, New York: Hyperthyroidism is the real thing we have to consider, and the question which arises in connection with these patients is whether or not they are being poisoned by the internal secretion. Cases of simple goiter of various forms may become the so-called exophthalmic goiter, that is, at some period in their history there may be hyperthyroidism, and it is then that we have these patients presenting a complex line of symptoms from the initial poisoning. It is a poisoning which varies in degree from the mildest disturbance to the most disastrous results. Degeneration takes place throughout the nervous vascular and muscular systems. The important point is that we should recognize this change when it begins; that we should study our patients carefully long before they require operative treatment. My experience has only been with general anesthesia, and I think it has in these cases so many advantages over the disadvantages of local anesthesia that general anesthesia should not be discarded.

Dr. E. A. Chase, Tarrytown: I have had experience with the Beebe serum, and while it has a beneficent influence over cases of exophthalmic goiter in controlling the symptoms, I cannot say that it has ever cured a patient with this disease.

Dr. A. L. Soresi, New York: The only contra-indication to local anesthesia in the surgical treatment of cases of exophthalmic goiter must be a more difficult technic and the pain the operator inflicts on the patient.

Dr. G. E. Beilby, Albany: No one is radical enough to maintain that every case presenting the symptom-complex, more or less complete, of exophthalmic goiter should be operated on. These patients should be placed under observation for two weeks or two months, and then if the symptoms do not improve, operation of some degree should be performed. I believe that local anesthesia is the most important single factor in lowering the death-rate of operations of these cases.

Dr. E. M. Stanton, Schenectady: There is no more definite, clean-cut anatomic operation in surgery than the incision of one lobe of the thyroid, and under these conditions of simple goiter there should be practically no mortality. Dr. Tinker has shown that under local anesthesia the mortality following operations on cases of exophthalmic goiter is now exceedingly low.

Dr. C H. Hacker, Albany: Excitation is an important etiologic factor and we should avoid it in these cases before and after operation. I see no reason why we should not use general anesthesia in cases of partial thyroidectomy. The results obtained by Ochsner, of Chicago, have convinced me that it is a safe procedure, and in a large series of patients operated on by him, covering a period of two years, there was only one death.

Developmental Defects of the Abdominal Viscera with Their Surgical Significance

Dr. W. F. Campbell, Brooklyn: Observation in 500 necropsies, together with clinical experience, have convinced me that many abnormal conditions of the abdominal viscera heretofore regarded as acquired are due to developmental defects and are rationally explained on this basis. In the course of evolution from the quadruped to the biped the long mesenteries of the former have been shortened and eliminated. In the quadruped the abdominal wall acts as a hammock for the viscera; in the biped it acts as a corset. This should be borne in mind in treating enteroptosis. Enteroptosis, nephroptosis and Lane's kink are developmental defects not due to wearing corsets. In the treatment of enteroptosis abdominal supports should be relegated to their proper place and gymnastics should be used to greater extent. Lane's kink is a factor in intestinal stasis, and simulates chronic appendicitis. It should be corrected by surgical procedure.

Malignant Tumors of the Kidney

Dr. H. Adsit, Buffalo: Hypernephroma occurs in from 91 to 97 per cent. of all kidney tumors; it has been a pathologic puzzle. The weight of evidence is in favor of epithelial origin of these tumors and that they are a malignant development of aberrant adrenal tissue. In serial sections of 241 normal kidneys adrenal rests were found in 7 per cent. These growths are *not infiltrating.* Metastases take place through the veins, seldom through the lymphatics. These tumors vary greatly in rapidity of growth, I have seen them of eleven years' standing; others grow very rapidly. In one case, the tumor weighed 7 pounds at the end of two months. Many cases reported as carcinoma are found to be hypernephromata, or else metastases from a primary cancer elsewhere. It is most frequent between the ages of 40 and 50, although cases have been observed in children.

Auscultation of the Cough

Dr. A. H. Garvin, Ray Brook: Auscultation of the cough offers the best means of diagnosis, and it requires no expensive apparatus or special experience. There are four positions of the cough in respiratory cycle: (1) the cough at the beginning of the inspiration, or at the end of expiration—at this point fleeting râles can be heard, especially in the axillary region; (2) the cough during some phase of inspiration—at this position it gives important information in the advanced stages of tuberculosis; (3) the cough at the zenith of inspiration—this is not to be used, as it obscures the sign; (4) the cough in this position, corresponding to the second position, is during some phase of expiration and frequently reveals abundant râles.

Exophthalmos a Common Symptom of Nephritis

Dr. H. C. Gordinier, Troy: This symptom, in varying degree, is a common sign of chronic nephritis, occurring in nearly one-half of the cases. It is usually associated with hypertension, without enlargement of the thyroid or marked tachycardia. It has been entirely overlooked in text-books, and only within a few years is mentioned in medical literature.

DISCUSSION

Dr. L. F. Bishop, New York: The degree of exophthalmos in Bright's disease varies with the condition of the patient, in that it is more marked when the condition of the patient becomes worse.

The Precancerous Stage

Dr. Parker Syms, New York: A careful analysis of cases of cancer with a careful retrospection will teach us more systematically just what abnormal conditions and lesions are frequently followed by cancer, and in this way we really will arrive at the most practical knowledge of the etiology of cancer. From a knowledge of the cause of a disease to a knowledge of its proper treatment is a comparatively easy step, and if we properly apply the lessons we have learned we shall be able to prevent, and that is far better than to cure, a large proportion of cancers.

Cancer Immunity in Its Present Status

Dr. Harvey Gaylord, Buffalo: A small percentage of animals with primary cancers recover, and this is true in a few instances in human beings. This has led to work on immunity. A certain immunity seems to be conferred by inoculating an animal with a growth from a different species. This immunity it has been found is not directed against the cancer cell, but against the growth; it is entirely independent of the cancer cell. From the spindle-cell sarcoma of a rat it has been possible to filter an agent which will produce tumors. One tumor has been thus produced, but it is not a spindle-cell sarcoma, but chondrosarcoma. Sarcoma has been produced in two animals by injection of warm fluid from a cancer of the omentum in a human being. The immunity obtained is specific. The question of vaccination has again arisen, and six cures by this method were reported at the late convention in Paris. In all probability the field for the employment of vaccination will be very limited. Early cases may be amenable. When tumors begin to retrograde it is necessary to remove as much of them as possible. Rats with small tumors have shown a pseudo-Wassermann reaction or deviation of complement reaction. The cases that show improvement give, in course of time, a Wassermann reaction equal to a marked syphilitic reaction. This reaction is a mark of growing immunity. A blood reaction known as the antitryptic reaction gives good indications of the progress of the case and enables one to tell when metastases are occurring.

Treatment of Intestinal Tuberculosis

Dr. S. G. Gant, New York: The results are much better from modern treatment than from the older methods, and more favorable results were obtained in cases in which the infection involved the superficial mucosa than in the enteroperitoneal form in which the inner and outer coats of the bowel sooner or later become involved. A large proportion of cures are now being effected by improved surgical technic and with comparatively little danger to the patient. Therapeutic measures employed in the treatment of intestinal tuberculosis may be divided into measures for improving the general health, symptomatic treatment, irrigation with ichthyol, balsam of Peru, boric acid or krameria and soda, 0.5 per cent. alternated daily with high injections of olive oil and bismuth to soothe the bowel; topical applications of silver nitrate, 8 per cent., balsam of Peru or ichthyol 20 per cent. Surgical treatment includes appendicostomy and cecostomy. Cecostomy and use of the enterocolonic irrigator provides a certain means of irrigating both the large and the small intestine separately or together.

The Rôle of Physicians in the Prevention of Insanity

Dr. A. W. Ferris, New York: The cooperation of physicians is especially desired in the efforts to inaugurate psychopathic wards or pavilions, maintained as a part of general medical hospitals, where borderland cases are received for care pending commitment or other disposition, where initial temporary treatment may be given, and where decent hospital accommodation will be substituted for the jail and the lockup. It is a matter of common notoriety that many insane persons are put under arrest and are treated as criminals and thrown into jail along with criminals simply because no adequate provision has been made by either city or county authorities for their care pending commitment. Here lies the physician's opportunity and herein is found his duty. Lives are in jeopardy, the happiness of thousands of families is at stake. Prophylaxis through a concerted effort is the only true economy and the only logical agency at this critical period in the history of our commonwealth.

Chronic Appendicitis

Dr. E. M. Stanton, Schenectady, presented a critical study of postoperative end-results, and then drew the following conclusions:

1. In my experience appendiceal dyspepsia has been characterized by symptoms strikingly analogous to the earliest symptoms of acute appendicitis, namely, attacks of epigastric or midabdominal pain or distress, but only rarely accompanied by subjective symptoms, referrable to the region of the appendix. During these attacks the pain or distress is nearly always increased by food intake.
2. Pain confined chiefly to the right lower quadrant and not associated with attacks of epigastric pain and nausea is seldom due to the appendix, and before making a diagnosis of chronic appendicitis in those cases every other possible condition should be excluded.
3. The majority of failures have been in patients complaining of right inguinal pain associated with chronic constipation. At operation these patients have presented an unusually long or dilated cecum, usually accompanied by other evidences of enteroptosis. In the future, a certain proportion of those patients may be cured by some such operation as that advocated by Wilms, but appendectomy alone does not cure.
4. Unless the diagnosis is absolutely certain, the gall-bladder, stomach and right kidney should be explored, and the possibility of a Lane's kink excluded in all patients operated on for chronic appendicitis.

Other Papers Read

The following papers were also read: "The Nervous Woman," by Dr. E. B. Angell, Rochester; "Radiographic Diagnosis of Lesions of the Gastro-Intestinal Tract, with Lantern Slide Demonstration," by Dr. L. G. Cole, New York; "Gunshot Wound of the Abdomen," by Dr. E. A. VanderVeer, Albany; "A New Method of End-to-End Anastomosis," by Dr. A. L. Soresi, New York; "Treatment of Bladder Tumors with the High-Frequency Current of Oudin," by Dr. E. Beer, New York; "The New Thoracic Department of the German Hospital of New York," by W. Meyer, New York; "Deductions from Clinical Experience with Use of a Polyvalent Bacterial Vaccine," by Dr. J. M. Van Cott, Brooklyn; "Clinical Observations of Cardiac Arrhythmias from the Modern Standpoint," by Dr. W. B. James, New York; "Mutual Helpfulness in Conservation of Public Health," by Dr. W. A. Howe, Phelps; "Exactness in Diagnosis of Renal Calculus," by Dr. P. M. Pilcher, Brooklyn; "A Local Hematologic Factor in the Causation of Uterine Hemorrhage," by Dr. A. Sturmdorf, New York.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held March 22, 1911

The President, Dr. C. B. Longenecker, in the Chair

SYMPOSIUM ON THE HOSPITAL DISPENSARY ABUSE PROBLEM IN PHILADELPHIA

Dr. Oscar H. Allis: The problem is so simple that any physician can solve it; yet simple as it is, it has remained the same after many annual discussions before the various medical societies. Considering the subject chiefly from the standpoint of state appropriations—which are made to our medical college hospitals and dispensaries in return for the enormous amount of charitable work they claim to do—and as this dispensary work must necessarily be extended to those who come on foot, it is obviously unjust to appropriate state funds for purposes which mostly concern the city. If the state would take care of the insane, aged and infirm, and the feeble-minded, and leave the various localities to care for the injured and for transient illnesses, the question of hospital dispensary abuse would resolve itself into the care of the very poor and such as really could not compensate the physician for attendance.

Dr. Addinell Hewson: The abuses that occur in hospitals come from a misconception on the part of the public. They feel that because they have paid their taxes they are entitled to receive gratuitous treatment from those connected with hospitals. It seems to me that the remedy must come through the county medical society insisting on investigation of those applying for free treatment. From a personal investigation, I have been surprised to learn the character of many so applying. Some patients had been to Europe several times. Some came to hospitals in carriages but dressed in old clothes, and waited in the dispensary. If investigation were made through some of the bureaus of the city equipped for this work there would be less dispensary abuse and the men living in the neighborhood of the hospitals and not connected with them would have a better opportunity of receiving that to which they are entitled. The institutions themselves ought to be impressed with the idea that as distributors of alms they are guilty of malfeasance in office if they give alms to people unworthy to receive them. I assert that if a patient who is well able to pay for treatment receives such treatment without cost that the managers of the institution are responsible for the wrong distribution of alms in their hands and their action ought to be checked.

Dr. Augustus A. Eshner: By hospital dispensary abuse I understand the availment gratuitously of medical services in a charitable institution by those able to pay. No doubt a certain measure of such abuse exists, but the extent and degree are somewhat difficult of estimation. In its worst form, it represents a desire to obtain something for nothing; or an endeavor on the part of those in modest circumstances to secure without cost special service that otherwise would be a strain on their resources, if not entirely beyond their means. Physicians' fees differ considerably, and the question arises whether a sick person shall have the privilege of selecting for his treatment the physician of special skill, ability or experience whose fee he may not be able to pay or shall be compelled to submit for treatment to a physician of lesser skill, ability and experience whose fee he can afford to pay. Who shall decide whether a patient can afford to pay for medical services or not; and how much he can pay? It would seem that the patient himself is the best judge, and if he is willing to admit his inability he should receive the benefit of any doubt. Naturally there will be some imposition, but it were better that a few guilty should escape exclusion than that one deserving person should be deprived. The dispensary patient who would deceive in this connection would equally find a way to evade payment of the physician's bill he is compelled to incur. From the practical standpoint the simplest solution of the problem would be to address to every applicant for dispensary treatment the question whether he is or is not able to pay a professional fee. If the answer is in the negative he should be received for treatment, if in the affirmative he should be referred to the physician of his selection.

Dr. George Erety Shoemaker: I have had more experience with this problem in connection with the indoor patient. The question of hospital abuse is complicated by the fact that hospitals have changed in scope, while their attitude toward the patients applying has not changed. No longer only the poor go to the hospitals but all classes. Some of the causes of abuse cannot be controlled; others can be corrected by the checking system. The remedy lies in frank recognition of the fact that hospitals are no longer public *charitable* institutions, but that all classes are seeking in them treatment; and, in having paid business officials, whose duty it shall be by investigation to weed out such persons as are of sufficiently good financial standing to pay. These individuals should be referred first to their own physicians and second to the younger men working in minor positions in the hospitals. There should be recognition on the part of all concerned that no one group of people is to blame, but that there are many causes at work. Physicians should not recommend for free beds persons whom they do not know. Often the families are able to pay but are not asked.

DR. J. M. BALDY: In from twenty to twenty-five years in dispensary work in Philadelphia it has been the exception in my experience to find people who were really well able to pay for medical treatment attempting to get something for nothing. A great deal of the dispensary abuse has been due to the physician himself, and to the fact that we live in a teaching center and must have material for teaching. The clinic that uses material in that way is paid in a measure for the so-called abuse. Better abuse than injustice; I would far rather treat a patient who I knew had abused my confidence, than turn away one poor person who needed treatment. The remedy lies with the individual physician. He can ascertain who are worthy without placing the applicants in humiliating positions. There is also a collective way by education of the public to the effect that it puts shame on persons to apply for free treatment if they are able to pay.

DR. JOSEPH D. FARRAR: The abuse of medical charitable service by institutions and the flagrant misuse of this charity for persons and for interests which can have no claim to our free service is such an insult to our self-respect and indignity to our intellect that we are in duty bound to resent it. A stipulated card ought to be filled out for each patient, a carbon copy to be retained by the dispensary, and the card itself sent on the same day to the office of the bureau of investigation, which should be established by the Charity Organization Society. The dispensary should provide itself with the means for the filing of the cards, but the cards themselves should be provided by the bureau of investigation. The original card should be filed with the bureau of investigation; the report of the bureau concerning each patient should be returned to the dispensary in convenient form for filing, with the card for that patient retained by the dispensary at the patient's first visit. Blanks should be filled out, giving name, age, occupation, residence, how long residing there, former address, place of employment, salary, how long in Philadelphia, family physician, physician last consulted. I believe that if we could raise a certain amount in Philadelphia, the Charity Organization Society would be only too glad to establish this bureau of investigation. Chicago is going ahead in this work by subscriptions furnished by physicians.

DR. G. M. ILLMAN: I think, as Dr. Baldy put it, that the trouble is due entirely to the physicians. This is true from many standpoints. Dispensaries are multiplied by the physicians themselves. A physician who has difficulty in getting his patients into the hospitals, becomes disgruntled and opens a house for the treatment of them, and this in time becomes a hospital. Dispensaries are started also by the state for the treatment of special diseases. I believe that the physician who pays state taxes is as much entitled to the facilities of the hospitals in his neighborhood as are the men connected with them. With this idea in mind, I have suggested that it is our duty to cooperate with every man wanting to use the wards of our hospital. In admitting patients for treatment we endeavor first to ascertain the name of their physician, and whether or not the patient is able to pay. We have gotten up a series of letters, one of which is sent to the family physician when the patient is admitted, and another when he is discharged. A similar method is employed in the dispensary. At the top of the dispensary card we have printed: "For the worthy poor." We have found these measures remedial in the question of pauperizing the public.

DR. JOSEPH PRICE: We should recognize the importance of scientific and not political care of worthy charities. Institutions of trust should be used wisely for their specific purposes. The tendency to multiplication of private institutions in the very teeth of old, large, and well-endowed charities emphasizes the fact that there is always something in public charity that snuffs out the scientific and humanitarian spirit and skill that the public demands. I have run a private hospital for more than a quarter of a century. One hundred of my colleagues and intimate friends have done precisely the same thing and attained skill and international prominence for their accomplishments and life-saving efforts. In this state, I have had the opposition of the great commonwealth. In other states such handicap does not prevail. Discrimination should be practiced in all institutions. The family and friends of all employed can easily pay hospital expenses. It would be difficult to determine just what is done with the endowment, the annual donation of the public and the maintenance from the state. One naturally asks what is done with such generous contributions. Private institutions have but one source of revenue and are excessively taxed and assessed.

DR. STEWART C. RUNKLE: There is no question of the existence of hospital dispensary abuse. I believe also that the hospitals and dispensaries are guilty of wrong. Patients are admitted without being asked whether or not they are able to pay. The people who have no business there are the very ones found there day after day, and no effort is made by the attendants to communicate with the family physicians. The little dispensaries, in my opinion, ought to be put out of existence entirely.

DR. HIRAM R. LOUX: Voluntarily, I do not believe that any patient who comes to the dispensary will tell his financial condition. He wants service free of charge if possible. There should be a general bureau of registration in large institutions from which the patients should be distributed to the various departments. No applicant should be treated free who is able to pay his family physician. Then, too, physicians drive patients to the dispensaries by long treatment without results. It is possible that the only effective way to overcome this evil would be through the appointment of a board of charity with sufficient remuneration to pay for the treatment of the poor in institutions.

MR. PORTER R. LEE, General Secretary, Society for Organizing Charity: The chief handicap which the abuse of the free dispensary privilege puts on the work of the Society for Organizing Charity follows from the habit of some of the sick poor going to several different dispensaries at the same time. So far as I have any suggestions to make to-night, I may summarize them as follows:

1. Overlapping in treatment ought to be and can be prevented, by the system of registration which we in cooperation with other city charities have adopted. Each society sends to a registration bureau at stated intervals, preferably every day, either by mail or telephone, a list of the persons who have applied for assistance. In response to this inquiry, the charitable society is given the names of such other charities as have already registered the same persons. The use of geographic areas is another available method of prevention.

2. Investigation of cases is desirable both to expose fraudulent applications and for the more important reason that only so can the dispensary treatment be definitely related to home, industrial and moral conditions which have a bearing.

3. When such investigations reveal conditions requiring relief and special kinds of service for which the hospitals and dispensaries are not equipped, the Society for Organizing Charity will be glad to cooperate in securing it.

4. Social service work as established by several of the Philadelphia hospitals and dispensaries for investigation and social treatment has proved to be a connecting link. The result has been a greatly increased efficiency from our point of view and we have received the testimony of medical men that it is true also from their point of view.

The solution of the problem of dispensary abuse must be largely in the hands of medical men, although it vitally affects the treatment of the poor by charitable societies. Any movement looking to the improvement of work in which we have a common interest will draw our hearty cooperation whenever physicians care to have it.

DR. R. OLIVER KEVIN related a number of incidents illustrative of the deception practiced by persons applying for free treatment at dispensaries. In one instance the patient after receiving treatment directed that a cab be called for her. Another instance was that of a person owning a large number of houses who described how cleverly she dressed up and went to the University of Pennsylvania where she received free treatment.

DR. E. J. G. BEARDSLEY: I have not heard of any hospital trying to stop this evil. I know of only four dispensaries that are actually trying to treat only people who deserve to be treated in the institutions. One is the Henry Phipps dispensary. Before the physician ever sees the patient, the patient is asked what the income of the family is and it is at once decided whether or not the patient is acceptable for treatment. I never saw a patient admitted who seemed to be able to pay. All the dispensaries run by the State of Pennsylvania ask the same question and with the same results. In the Jefferson medical department we send away from fifty to 250 patients a month who are able to pay. The statements of the patients themselves prove that they are perfectly able to pay a physician. We ascertain the name, address and amount of income of the applicant. A large element of the trouble is the fact that many people outside are treated very badly. The patient receives no examination, no diagnosis is made and he is treated in a most indifferent way. Many of these patients tell, without inquiry, such tales that we treat them at once. In one instance a man with a failing heart was told that he needed *x*-ray treatment, and this was given him—at $5 a "throw." The problem is said to be a hard one. If this is true, it is made so by the physician, continued by the physician, and can be readily stopped by the physician. A hospital that accepts money from the state to take care of poor people should see that poor people are treated. I was interested and gratified in overhearing the remarks of two boys waiting in our dispensary. One had said he did not believe he could wait, when the other boy replied: "You will soon see the feathers and the furs come out."

Dr. B. Alexander Randall: The dispensary physician or surgeon has a multiple responsibility: his responsibility to the institution, to his fellow practitioners, to his students, to the public, and to the patient, both as a sick person and as a citizen. Many of the public still believe that the hospital and dispensary are provided by the state for the free use of all citizens, just as the public schools are open to all who are not too snobbish to use them, and that they as taxpayers have a right to the services of all medical men in the dispensaries. Mercenary men may strive to use dispensary positions to fill their own offices. Well-meaning physicians will bring to a dispensary surgeon patients for examination whom they state are to be placed in his care as pay-patients. My services having generally been used for teaching, I have made it a rule to examine each patient so as to meet any urgent needs, to use pointedly for teaching purposes the doubtful patients, and only after we had received that much *quid pro quo*, to register the findings and in especial relation to the address given make inquiry concerning the need of charity treatment. After having been given a realizing sense of what charitable treatment is likely to entail, most of the improper cases are ready to consult a physician in his office. One should never volunteer his own address to any but emergency cases requiring treatment between clinic days. While it is often best that the same worker should keep oversight of a patient at the return visits, the chief may discourage the doubtful patients, who wish to have in the clinic the skill of a certain man only, by assigning them to others. They will inquire the address of the man desired and voluntarily consult him.

Dr. William Duffield Robinson: Of the number of people receiving free dispensary treatment fully 10 per cent. could pay the fee that the young doctor is accustomed to receive from people in moderate circumstances. In New York state it is now a statutory crime for one able to pay to take free dispensary treatment from hospitals receiving state aid.

Dr. G. G. Davis: Among some of the causes of the abuse which exists are the facts that: 1. Physicians are saddled by the public with an unfair proportion of the charitable work in a community. This is shown by the character of the applicants for charitable medical services and by the disapproval which is likely to be visited on a medical officer who refuses applicants his medical services. 2. There is an absence, first, of any standard as to who are unworthy; and, second, of any means of enforcing a standard. 3. By the direct encouragement of the profession, largely due to the expense of apparatus and dressings and to not being qualified in the specialties.

The following remedies are offered: 1. The hospital should maintain an official whose duty it should be to decide as to the claims of the applicant for treatment. It is difficult for the physician in charge to do this. 2. The profession should cease to refer improper cases to the public institutions and should see that the patients have a proper opportunity of securing treatment elsewhere.

Dr. John B. Roberts: I am of the opinion that persons of moderate circumstances frequent the hospital dispensary: 1. Because many family practitioners are not well posted in modern methods of investigating and treating disease, or are too careless or too lazy to give their patients the benefits of scientific treatment. 2. Because those who are competent to treat the sick, particularly in the specialties, ask fees too high to be paid by patients of the middle class, such as artisans, and self-supporting women. I believe that a graduate, who has tact, energy and medical knowledge and who is willing to work hard and well for his patients, need not fear that mechanics and business people of moderate means will prefer the hospital to him as a medical attendant. The man who is treated for weeks for debility by a doctor who never examines his urine, or for bilious headache by one who never asks about his vision, is apt to obtain better treatment at the hospital dispensary than at the hands of an inefficient medical graduate.

Dr. A. B. Hirsh: The statements made here to-night are repetitions of those made in Chicago. The managements of hospitals in Chicago, after acknowledging the abuses, refused to reform their methods. The general practitioners got together and the specialists began to take alarm at the thought of losing valuable consulting practice. The situation was controlled by the general profession paying the expenses of the United Charities in handling the subject. Each dispensary in that city sends each morning to the United Charities a typewritten list of the new patients with their addresses and that body, after going over the catalogue, sends in its report to the institution. We must do that in Philadelphia. Those who expect individual hospitals to do this will be deceived. It must be done by all the hospitals together with the entire medical profession backing up the movement.

Dr. Howard S. Anders: Not many years ago there came to my intimate knowledge the experience of a chief of a medical dispensary who, feeling that loyalty to the profession at large was on a higher plane than loyalty to the institution itself, instructed the attendants to discriminate between those people able to pay and those who were not. After some time this came to the ears of those higher up and he was informed that he must discontinue such discrimination because it would lower the percentage of work done and interfere with a sufficiency of cases for demonstration. This he refused to do and resigned. This is illustrative of one aspect of the question within the medical profession itself and demonstrates institutional vanity for statistics and professorial avidity for cases.

Resolution Adopted

Dr. Howard S. Anders offered the following resolution, which was seconded and carried:

Whereas, the results and trend of the symposium discussion on the topic "The Hospital Dispensary Abuse Problem in Philadelphia," indicate sufficiently its vital importance and general medicosociologic significance as to call for further, broader, and yet more definite and responsible action; be it

Resolved, That a committee of five be appointed to devise ways and means of practically dealing with such abuses as are considered to exist; and to report conclusions and recommendations at the June business meeting of the society.

The following committee was appointed: Dr. Howard S. Anders, chairman; Dr. G. Morton Illman, Dr. Edward J. G. Beardsley, Dr. A. B. Hirsh, Dr. Joseph D. Farrar.

Dr. J. Cardeen Cooper: It does not seem to me that a learned profession should attempt to regulate this matter by appointing a committee. From the general practitioner's standpoint, the abuse does not exist with the hospitals so much as with the general profession. If the committee gives its attention alone to the hospitals the matter is one-sided. As Dr. Roberts has said, people go to hospitals because they receive better treatment, and in many instances they do. Therefore, the matter is in the hands of the general practitioners, and as soon as we become proficient and treat our own patients the hospitals will not make such great inroads on them.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

May

1 *Anatomic Explanation of the Paralysis of the Left Recurrent Laryngeal Nerve Found in Certain Cases of Mitral Stenosis. G. Fetterolf and G. W. Norris, Philadelphia.
2 *Arneth's Method of Blood Counting—Its Prognostic Value in Pulmonary Tuberculosis. C. L. Minor and P. H. Ringer, Asheville, N. C.
3 Experiences with the Einhorn Duodenal Bucket and a Modified Thread Test. W. G. Morgan, Washington, D. C.
4 Researches in Prophylactic and Anaphylactic Medicine. L. K. Hirshberg, Baltimore.
5 Vaccine Therapy of Pyorrhea Alveolaris. W. R. Williams, New York.
6 Medicinal Treatment in 1,106 Cases of Delirium Tremens. S. W. Ranson and G. D. Scott, Chicago.
7 Cause and Relief of Pain in Duodenal Ulcer. J. T. Pilcher, Brooklyn, N. Y.
8 *Complement-Fixation Test in Diagnosis of Gonococcic Infections. H. J. Schwartz, New York, and A. McNeil, Derby, Conn.
9 *Pulsations in the Peripheral Veins. H. C. Bailey, New York.
10 Diagnosis of Pellagra. H. F. Harris, Atlanta, Ga.
11 Vaccine Therapy and a Simplified Opsonic Index. A. W. Crane, Kalamazoo, Mich.

1. **Mitral Stenosis.**—It is the authors' conviction, based on careful study of the anatomic relations in hardened preparations, that the indirect mechanism may be a variable one, but that when compression is accountable for the recurrent paralysis it must always be caused by the nerve being squeezed between the left pulmonary artery and the aorta or the aortic ligament. Anything which will dilate or force upward the left auricle, the left upper pulmonary vein, or the left pulmonary artery would tend to cause the condition. The anatomic relations are such that direct pressure of any portion of a dilated left auricle on the aortic arch is impossible. Considering the softness of all the structures involved, and the fact that the nerve is normally flattened against the aorta, not rounded, it would seem that its function is abolished, not from actual destruction from pressure, but from a neuritis consequent on a degree of compression which could hardly be sufficient actually to destroy the vitality of the nerve.

2. **Arneth's Method of Blood Counting.**—The authors endorse Arneth's method as having a distinct value in enabling one to estimate the resisting power, and hence the likelihood of recovery and general prognostic outlook in cases of tuberculosis. Arneth considered that young white cells—those with one or two nuclei—are less resistant and less able to combat an infection than the older ones with more nuclei. Starting out with this assumption, he counted the number of nuclei in all the neutrophilic white cells, and divided them into five classes, according to the number of their nuclei. Placing these numbers in a horizontal row, beginning on the left with Class I, which contained one nucleus, and ending on the right with Class V, which contained five nuclei, he formed what he called the neutrophilic blood-picture. From a count of fifteen normal individuals he formed a normal picture. Studying the blood in pulmonary tuberculosis, he found, in consonance with his theory, that the normal percentage of nuclei in the different classes was lost, there being an increase of the younger cells of Classes I and II, and a lessening of the more mature ones in Classes III, IV and V, this being more marked in proportion to the severity of the trouble.

8. **Gonococcus Infections.**—The complement-fixation test as applied to the detection of gonorrhea by Schwartz and McNeil proved of great assistance. They found that the different strains of the gonococcus differ markedly one from another—so much so that the antibodies produced in the body by the toxin of one strain will in many instances not bind complement in the presence of an antigen prepared from another strain. Therefore, if only one strain is used in the preparation of the antigen, a great many negative results will be obtained in positive cases. An antigen prepared from many strains fixes complement whenever one of its component strains does so and, consequently, the necessity of testing a serum against a number of antigens separately is avoided. It is not to be denied that there probably are other strains of gonococci differing widely from any present in the polyvalent antigen, so that at times a negative result will be obtained in a positive case. They believe, however, that working with an antigen composed of many strains, one will obtain a positive reaction in the majority of cases of gonococcus infection, and the use of the polyvalent antigen simplifies the procedure so that it can be of practical value for diagnostic purposes. The facts seem to prove that a positive reaction is an indication of living gonococci somewhere in the body, and if found in men or women supposedly cured of gonorrheal infection in the genito-urinary tract, should be construed to mean that they are still capable of infecting others through sexual intercourse. The importance of this in connection with marriage is self-evident.

9. **Pulsations in the Peripheral Veins.**—That the right heart may produce a pulse wave in the veins of the extremities is shown by Bailey's observations. This pulse wave occurs considerably later than the arterial pulse. He suggests that incompetency of the tricuspid valve may be the cause of varicosities of the veins of the extremities.

New York Medical Journal

April 29

12 Therapeutics of Syphilis. V. C. Pedersen, New York.
13 Present Status of Salvarsan Therapeutics. A. G. Rytina, Baltimore.
14 Dangers and Contra-Indications of Salvarsan. F. Wise, New York.
15 A New Apparatus for Administering Salvarsan Intravenously. E. G. Ballenger, Atlanta, Ga.
16 The Intravenous Injection of Salvarsan. W. R. Thomson, Warsaw, N. Y.
17 Rabies. G. G. Rambaud, New York.
18 Treatment of Hiccup. H. D. King, New Orleans.
19 Uses of the "Cold Cautery," Especially in Dermatology. L. D. Frescoln, Philadelphia.
20 Is Antitetanic Serum a Factor in the Cure of Tetanus? J. C. Kennedy, Brooklyn, N. Y.

Bulletin of the Manila Medical Society

March

21 *Efficacy of the Ipecac Treatment of Dysentery. E. B. Vedder, U. S. Army.

21. **Ipecac Treatment of Dysentery.**—The results of bacteriologic experiments made by Vedder seem to show that 2 per cent. fluid extract of ipecac inhibits the growth of dysentery bacilli, although this is not a specific action, since ipecac also inhibits the growth of bacteria, and other drugs, such as hydrastis and digitalis are quite as powerful as ipecac in inhibiting dysentery bacilli. The *B. dysenteriæ* of the Shiga type that Vedder worked with appears to be more susceptible to the action of ipecac and other drugs than the Flexner strain. The treatment of bacillary dysentery by ipecac is not recommended by Vedder, because, he says, it has not been shown that ipecac possesses any greater activity against dysentery bacilli than many other drugs, and because it would probably be difficult, on account of dilution with intestinal contents, to give sufficient ipecac to make a solution in the intestine as strong as a 2 per cent. solution of the fluid extract, which was the strength used in these experiments. However, since ipecac has been shown to inhibit the growth of dysentery bacilli to some extent, it has probably done patients with bacillary dysentery no harm and, on the other hand, may possibly have accomplished some good, particularly if the dysentery were caused by the Shiga type of *B. dysenteriæ*.

The experiments showed that the action of ipecac on amebas is much more powerful. Amebas in a 5 per cent. bouillon culture were at all times killed by a fluid extract of ipecac in a dilution of 1/50,000, and sometimes killed by even higher dilutions such as 1/200,000. In these experiments two varieties of amebas were used, one isolated from tap water, and one isolated from the stool of a normal man. Vedder was unable positively to identify either culture, but is sure that neither of these varieties was either *Entameba coli* or *Entameba dysenteriæ*. Vedder holds that the ipecac treatment of dysentery caused by protozoa should not on light grounds be set aside in favor of any other, but that in using this treatment great care should be taken to make sure that the dysentery is truly caused by protozoa and is not bacillary, and also to obtain an ipecac that is shown by actual analysis to contain its proper amount of emetin, and when this is not possible, to insist on obtaining the Brazil root.

Lancet-Clinic, Cincinnati

April 29

22 *Acute Abdominal Manifestations of Syphilis. L. A. Levison, Toledo, Ohio.
23 *A Study of the Tubercle Bacillus Cultivated from Nine Consecutive Cases of Primary Tuberculous Cervical Adenitis. W. Litterer, Nashville, Tenn.
24 The Thyroid Gland. S. P. Beebe, New York.

22. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1221.

23. Abstracted in THE JOURNAL, Sept. 24, 1910, p. 1135.

Journal of the Arkansas Medical Society, Little Rock

April

25 *An Unusual Case of Appendicitis. C. G. Pettus, El Dorado.
26 Tonsillectomy—Its Indications and Methods. R. H. T. Mann, Texarkana.
27 Cooperation of the Physician and Surgeon in Treatment of Acute Intra-Abdominal Diseases Necessary to Obtain the Best Results. J. P. Runyan, Little Rock.
28 Publicity vs. Quackery and Other Frauds. J. D. Southard, Fort Smith.

25. **Appendicitis.**—In Pettus' case, one of typical appendicitis, a constant pyuria was found to be due to adhesion of the appendix to the ureter and communication between the two.

Virginia Medical Semi-Monthly, Richmond

April 21

29 Nine Cases of Pulmonary Tuberculosis Treated by Compression of the Lung. M. E. Lapham, Highlands, N. C.
30 The Roentgen Ray in Diagnosis of Urinary Calculi. A. L. Gray, Richmond.
31 Clinical Diagnosis of Early Tabes Dorsalis with Negative Wassermann Reaction. T. A. Williams, Washington, D. C.
32 Treatment of Gonorrhea in the Male. J. R. Littlefield, Cumberland, Md.
33 Diagnosis and Treatment of Abdominal Injuries. W. L. Powell, Roanoke.
34 *Medical Treatment of Ingrowing Toe-Nail. S. Harnsberger, Catlett.

34. **Treatment of Ingrowing Toe-Nail.**—Surgical intervention, which is surgical interference, is not considered a treatment for ingrowing toe-nail by Harnsberger. He believes in local treatment. He cleanses the unhealthy soft parts, using, if necessary, some reliable antiseptic solution or soap, with or without a brush, as the case may be. Then, after drying the cleansed parts thoroughly, he applies liquefied phenol (one drop usually) to the most sensitive point and as near the corner of the nail as he can get it. If the toe is well protected by clean gauze, the phenol is used once a day, with or without recleansing, until the soft parts are healed and hardened and the point of the nail is lifted out of the socket it has formed in the flesh. If the phenol does not seem to give satisfactory results, which will seldom happen, or, perhance, fails altogether, then Harnsberger uses the following powder:

℞	Gm. or c.c.		
Thymolis		66	gr. x
Mentholis		66	gr. x
Acidi boracici	4		ʒj
Aluminis q. s.	ad 15		℥ss

The alum should be pulverized finely and dried thoroughly; triturate all and apply freely. In mild cases the powder can be left on until the parts heal. In bad cases the applications may be renewed as thought best. A thin rubber cot should be worn on the affected toe to keep the remedy in place and to protect the parts from possible outside infection. Unless the secretions stain the powder, the applications need not be renewed every day. If it is necessary for the patient to go about, the affected part can be protected by properly applied pieces of thick felt kept in place by adhesive strips. Usually a piece applied to the inner side and top of the toe just back of the painful joint, gives ample protection; and, not only wards off painful pressure of the shoe, but hastens the healing process. Harnsberger has never seen a case so bad that it could not be cured by mild local means.

Philippine Journal of Science, Manila

November

35 Rabies in the Philippines. F. W. Dudley and E. R. Whitmore, Manila.
36 Researches on Acarids Among Lepers. M. Lefebvre, Manila.
37 Occurrence of an Accessory Nasofrontal Duct of the Frontal Sinus. E. Clark, Chicago.
38 Spontaneous Occurrence of Dysentery in Monkeys. F. B. Bowman, Manila.
39 Complement Fixation in Yaws. F. B. Bowman, Manila.
40 Pellagra: Report of a Probable Case in the Philippine Islands. D. G. Willets, Manila.
41 Examinations of Stools and Blood Among the Igorots at Baguio, Philippine Islands. W. P. Chamberlain, H. D. Bloomberger and E. D. Kilbourne, U. S. Army.
42 Unidentified Larvæ of Some Dipterous Insect Developing in the Deep Urethra and Bladder of Man, Producing Severe Abdominal Symptoms. G. P. Trible. U. S. Navy.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

April

43 Carcinoma of the Breast. W. C. MacCarty and B. C. Willis, Rochester, Minn.
44 *Jaundice in Pernicious Anemia. D. Vanderhoof, Richmond.
45 *Sixty-Six Cases of Pellagra Occurring Outside of Institutions. B. R. Tucker, Richmond.
46 *Early Pulmonary Tuberculosis: Diagnosis without the Use of the Microscope or Stethoscope. N. T. Ennett, Richmond.
47 Pregnancy Following the Complete Removal of One Ovary, and at the Same Time the Major Portion of the Opposite One. J. E. Stokes, Salisbury, N. C.

44. **Jaundice in Pernicious Anemia.**—Vanderhoof reports a case of jaundice associated with weakness. There were no abdominal symptoms or evidence of obstructive lesion of the bile ducts. The blood-picture was typical of Addison's anemia. There was marked improvement of health and disappearance of jaundice under appropriate treatment with arsenic and the institution of proper hygienic measures.

45. **Pellagra.**—A very complete table of these sixty-six cases is offered by Tucker in his paper and also a very good question form which he got up for the Virginia State Board of Health for use in the study of pellagra. Forty-eight of the patients were females and eighteen were males. There were only ten negroes to fifty-six whites. In Tucker's opinion, negroes are less susceptible. Three of the ten negroes were reported to be mulattoes. The hygienic surroundings were poor in only sixteen cases. Ten patients rarely ate corn products and six never ate corn products or had not done so for years. This would seem to eliminate maize as the causative factor in pellagra. In only sixteen cases was the skin lesion the first manifestation. Seventeen patients died during the first attack; seven died the second year, one of these committed suicide. Five patients died after the second year; one died six years after diarrhea and two years after skin lesions. In three the course of the disease was unknown. Total deaths were thirty, a mortality of nearly 50 per cent. All deaths other than the suicide were attributable to the constitutional effects of the disease. Thirty-two of the living patients had one or more remissions. In three, the remission was thought to have lasted over one year. One case is in the first attack. Hexamethylenamin was the exclusive treatment given in fourteen cases in doses of from 20 to 45 grains a day. In seven, immediate improvement was noted, and the patients went into complete remission within four weeks and there was no return. In two, the same result took place, but no report has been received of their condition this year. In two, the hexamethylenamin was advised but the result has not been heard. One patient was given the drug for three days and committed suicide. One case of five years' standing cleared up with hexamethylenamin, except some nervous symptoms and the patient died several months afterward in convulsions but without gastro-intestinal or cutaneous symptoms. In one case hexamethylenamin was given to a patient in a moribund state. He died in a few days.

46. **Early Pulmonary Tuberculosis.**—For diagnostic purposes Ennett emphasizes the importance of the following: The tuberculous patient will usually come to his physician complaining of being "run down," and a careful history will usually reveal many of the following symptoms: He has little or no energy, becomes tired easily, spends restless nights, and may or may not have sweats, has some dyspeptic symptoms or complains of frequent "colds." These colds are usually described as "chest colds" instead of "head colds." He will probably have a slight but constant rise of temperature, usually in the afternoon, rapid pulse, even while at rest, chilly feelings, and possibly some loss of weight. Hypersensitiveness of the entire nervous system; hemoptysis; an occasional, non-productive, hacking cough, accompanied by a tickling sensation in the larynx, usually worse at night on retiring or in the morning on arising; hypersecretion of mucus in the respiratory tract; pain located anywhere in the chest,

but usually over the apices, and pleurisy are all significant and should be considered carefully.

New Mexico Medical Journal, Las Cruces

April

48 Climate of the Southwest in Relation to Tuberculosis. W. R. Saltzgaber, Alamogordo.
49 Etiology of Rheumatic Fever. W. G. Hope, Albuquerque.
50 Rheumatism. S. G. von Almen.

Pennsylvania Medical Journal, Athens

April

51 *A Plea for the More Intelligent Care of the Pregnant and Lying-In Woman. H. F. Tomb, Johnstown.
52 *The Results of Gall-Stones. J. A. McGlinn, Philadelphia.
53 *Clinical Studies in the Auscultatory Method of Determining Blood-Pressure. E. H. Goodman and A. A. Howell, Philadelphia.
54 *High Arterial Tension. A Clinical and Therapeutic Study. R. M. Goepp, Philadelphia.
55 Diagnosis and Treatment of Relaxed and Weak Feet. C. A. E. Codman, Philadelphia.
56 Recent Advances Made in Syphilis. A. A. Uhle, Philadelphia.
57 Early Ocular Signs of Syphilis. W. Reber, Philadelphia.
58 Ocular Affections in Congenital Syphilis. S. D. Risley, Philadelphia.
59 Aural Manifestations of Syphilis. S. McC. Smith, Philadelphia.
60 Syphilis of the Upper Respiratory Tract. G. C. Stout, Philadelphia.
61 Resection of Pendulous Fat from the Abdominal Wall in Connection with Laparotomy for Other Conditions. B. M. Anspach, Philadelphia.
62 Acute Mania: Its Diagnosis, Prognosis and Treatment. G. W. McCafferty, Philadelphia.

51, 52. Abstracted in The Journal, Nov. 19, 1910, p. 1838.

53. Abstracted in The Journal, Oct. 29, 1910, p. 1581.

54. **High Arterial Tension.**—High arterial tension is not in itself regarded by Goepp as an indication for direct corrective treatment by drugs, but as a diagnostic sign of value in a number of morbid conditions characterized by the absorption of toxic substances, poisons or disease products, and in the early stages of chronic interstitial nephritis and general arteriosclerosis. Lowering an excessive blood-pressure below a certain point, which varies for each individual, may be harmful instead of beneficial. While excessive arterial tension (above 180 millimeters of mercury, systolic pressure) is unquestionably an unfavorable prognostic sign, it may be present for years, and is not incompatible with a fair degree of health.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

April

63 The Tuberculosis Sanatorium and What It Stands For. F. M. Pottenger, Monrovia, Cal.
64 High-Potential Electricity in Therapeutics. W. B. Snow, New York.
65 Study of the Backward Child. E. B. McCready, Pittsburg, Pa.
66 Suggestions for the Pharmacopeia. F. P. Morgan, Washington, D. C.
67 Maternal Responsibility and Infant Feeding. H. Lowenburg, Philadelphia.
68 Favus. L. D. Frescoln, Philadelphia.
69 Veratrum Viride in Lobar Pneumonia. T. G. Stephens, Sidney, Iowa.
70 Eligibility of Pension Claimants from the Standpoint of the Ophthalmic Expert. L. W. Fox, Philadelphia.
71 Iodin and Iodin Catgut in Surgery. J. A. McGlinn, Philadelphia.

Journal of Experimental Medicine, Lancaster, Pa.

May

72 Value of Hydrogen Peroxid in the Microchemical Determination of Iron. W. H. Brown, Madison, Wis.
73 *Vaccine Therapy in Prevention of Dysentery in Infants. W. P. Lucas and H. L. Amoss, Boston, Mass.
74 *Characteristics of Growth of Sarcoma and Carcinoma Cultivated in Vitro. R. A. Lambert and F. M. Hanes, New York.
75 *A Study of Cancer Immunity by the Method of Cultivating Tissues Outside the Body. R. A. Lambert and F. M. Hanes, New York.
76 *Studies on Immunity in Cancers of the White Rat. I. Levin and M. J. Sittenfield, New York.
77 Relation of Certain Bacteria to Non-Specific Reactions with the Complement-Fixation Test for Syphilis. C. F. Craig, Washington, D. C.
78 Occurrence of Grouped Isoagglutination in the Lower Animals. R. Ottenberg and S. S. Friedman, New York.
79 Tonicity in Isohemagglutination. M. H. Kahn and R. Ottenberg, New York.
80 Distribution of Solutions in Cardiectomized Frogs. S. J. Meltzer, New York.
81 *Influence of Distilled Water on the Healing of Skin Wounds in the Frog. E. S. Ruth, New York.
82 *The Physicochemical Regulation of the Growth of Tissues. A. Carrel and M. T. Burrows, New York.
83 *Cultivation in Vitro of Malignant Tumors. A. Carrel and M. T. Burrows, New York.
84 Behavior of Bacillus Lepræ in Cold-Blooded Animals. M. Couret, New Orleans.
85 Complementoid and the Resistance of the Mid-Piece of Complement. H. K. Marks, New York.

73. **Prevention of Dysentery in Infants.**—This investigation is very limited and the number of patients treated is few (ninety-five). The vaccine in no instance did harm, and the reactions in the majority were very mild and of short duration. Cases in which bacteriologically *B. dysenteriæ* were proved to be present, but in a clinically unrecognizable form, were not affected differently from those which were culturally negative. This may be due in part to the fact that this mode of vaccination produces an immediate passive immunity, while the bacterial vaccine is producing an active immunity. The work is of interest and holds out a possible means of preventing the great mortality from infantile dysentery during the summer months.

74. **Growth of Sarcoma and Carcinoma in Vitro.**—Lambert and Hanes report that in their experimental work, the transplantable sarcomata of rats and mice were found to grow very readily by the method of cultivating tissues *in vitro*. Sarcomatous tissue grows in conformity to a type which may be regarded as characteristic for tissues of mesenchymal origin. The growth of sarcoma cells *in vitro* consists in ameboid wandering into the surrounding plasma, karyokinetic proliferation, and evidences of active metabolism on the part of the cells. Mouse carcinomata can be cultivated *in vitro*. The outgrowth of carcinoma cells assumes a sheet-like form, only one cell in thickness. They migrate into the plasma by ameboid movement, the advancing edge showing numerous prolongations of the cytoplasm into pseudopods. Karyokinetic figures are frequently seen in growing carcinoma cells. The cells show evidence of active metabolism. Both sarcoma and carcinoma cells cultivated *in vitro* show active phagocytosis; carmin particles placed in the plasma are taken up rapidly by the growing cells.

75. **Cancer Immunity.**—It is said by Lambert and Hanes that sarcoma cultivated in plasma from immune animals grows quite as vigorously as in plasma from normal and tumor-bearing animals, thus affording further proof of the absence of specific cytolytic substances in the body fluids of animals immune to transplantable cancer. Animals may be successfully inoculated with sarcoma cultivated *in vitro*, although, in the case of rat sarcoma, there is evidence of diminished virulence. Subcultures of sarcoma cultivated *in vitro* may be made by transferring to fresh plasma the original piece of tissue, or a portion of the outgrowth. The duration of life of sarcoma cells under these conditions seems dependent only on a renewal of the medium.

76. **Immunity in Cancers of the White Rat.**—Indirect evidence is brought forward by Levin and Sittenfield through their investigation to show that immunity to cancer growth, but not to tumor grafting, is caused not by differences in intracellular nutrition, but by an active inhibitory influence of the organism of the host on the cancer cells. It appears from their experiments that a mouse tumor through a sojourn in the rat reacquires the characteristics of a spontaneous tumor; namely, it takes in a small percentage of inoculated animals, and this percentage increases in subsequent generations. But the diminution of the virulence of the tumor which takes place in the organism of the rat is due to congenital racial immunity of the latter. Furthermore, the immunity of the rat against mouse tumor is not due to conditions of nutrition, but is accompanied by an active noxious influence of the organism of the rat on the mouse tumor.

81. **Healing of Skin Wounds in the Frog.**—Ruth's experiments demonstrate the important point that the healing of epidermal wounds of the frog takes place in a practically identical manner in culture *in vitro* and in the body of the animal. They show further that the rate of growth of new epithelium which constitutes the process of cicatrization is accelerated by a diluted medium, both *in vitro* and *in vivo*. Thus, by increasing or diminishing the degree of dilution of the medium, or by injecting distilled water or hypertonic solutions into the animal, the rate of growth can, and will up to a certain point, be accelerated or retarded.

82. **Physicochemical Regulation of the Growth of Tissues.**—It is concluded by Carrel and Burrows that the degree of dilution of the culture medium has a marked influence on the rate of growth of splenic tissue. The maximum acceleration was obtained in a medium composed of three volumes of normal plasma and two volumes of distilled water. The growth in this hypotonic plasma was very much larger than in normal plasma. On the contrary, the growth of the spleen in hypertonic plasma was always less than in normal plasma. In other experiments, they found that in diluted plasma there was also an acceleration of the growth of the skin, the heart, and the liver of chickens. The skin of adult frogs also grew more actively in this plasma. The optimum degree of dilution varied according to the nature of the tissues and to the species of the animals. While the plasma containing two-fifths distilled water produced the largest growth of splenic tissue, a slightly less diluted medium was more favorable for the liver and the heart, and generally for the skin also.

83. **Cultivation in Vitro of Malignant Tumors.**—Experimental malignant tumors were found to grow *in vitro* extensively, and the cultivation of human tumors is also possible, although much more difficult on account of the liquefaction of the plasma.

Wisconsin Medical Journal, Milwaukee

April

86 *Prevention and Treatment of Septic Infections of the Extremities. E. H. Ochsner, Chicago.
87 Early Diagnosis of Cancer. F. G. Connell, Oshkosh.
88 Case of Lithopedion. M. M. Spitz, Milwaukee.
89 Diet and General Management of Typhoid. L. M. Warfield, Milwaukee.
90 *Traumatic Hernia. J. F. Pember and T. W. Nuzum, Janesville.

86. Abstracted in The Journal, Nov. 5, 1910, p. 1678.

90. Abstracted in The Journal, July 23, 1910, p. 344.

Military Surgeon, Washington, D. C.

May

91 An Outline of the Organization of the Medical Department of the Japanese Navy. E. S. Bogert, U. S. Navy.
92 Experience of the Army with Vaccination as a Prophylactic Against Small-Pox. J. V. Hoff, U. S. Army.
93 Natural Immunizations versus Artificial Vaccine Therapy. H. Shoemaker, N. G. Pennsylvania.
94 *Disappearance of Beriberi from the Philippine (Native) Scouts. W. P. Chamberlain, U. S. Army.
95 Service at Minnesota Forest Fires of 1910. H. L. Lamb, N. G. Minnesota.
96 *Protection from Typhoid by Inoculation. W. J. L. Lyster, U. S. Army.
97 Hospital Corps Instruction on Board Ship. W. S. Pugh, U. S. Navy.

94. **Disappearance of Beriberi from Philippine Scouts.**—Chamberlain shows that beriberi has disappeared from the Philippine (native) scout organizations during the last half of the year 1910. There have been no sanitary improvements to account for this, except the changes in diet, and there has been no corresponding decrease in the admission rate for diseases other than beriberi. There was no corresponding decrease in the incidence of beriberi in the general Filipino population or in the Philippine (native) constabulary. The decrease in admissions for beriberi among the scouts was clearly marked for four months before the use of undermilled rice began. The decrease in admissions was well under way before the mongos, camotes and ginger root of the new ration began to be issued. The decrease in the admissions for beriberi was due either to unknown causes acting coincidently with a reduction in the amount of rice used and the addition of a legumen, or was due directly to these dietetic changes. As no other reduction in admissions even approaching that of 1910 has occurred since the organization of the scouts in 1901, the authors do not believe that the present decrease is due to coincidence. The facts do not oppose the polished rice theory of beriberi production. On the contrary Chamberlain believes that they support it.

96. **Protection from Typhoid by Inoculation.**—Lyster details the experience of inoculating an entire regiment in order to prevent the spread of typhoid. After the completion of the inoculation of the regiment (376) and nearly seventy civilians at the post, including the teamsters, no new cases appeared. Later this regiment, except one troop, left post on a twenty-one day march, some 300 miles. On the return of the command, after spending twenty-one days in a country where typhoid is known practically throughout the year, and having lived under war conditions, the sick report is stated by the commanding officer to be *nil*. No subsequent cases of typhoid developed.

Ophthalmic Record, Chicago

April

98 Toxic Paralysis of Accommodation. H. F. Hansell, Philadelphia.
99 Ocular Affections in Congenital Syphilis. S. D. Risley, Philadelphia.

New Orleans Medical and Surgical Journal

May

100 *Malignancy in Tumors. F. B. Gurd, New Orleans.
101 Two Cases of Cirrhosis of the Liver Operated on by Narath's Procedure. E. D. Martin, New Orleans.
102 *Ingrown or Overgrown Toe-Nail. H. B. Gessner, New Orleans.
103 Tumors of the Lung. W. H. Harris, New Orleans.
104 Copper Salts and Ipecacuanha in Amebic Colitis. J. A. Storck, New Orleans.

100. **Malignancy in Tumors.**—Special emphasis is placed by Gurd on the relative malignancy in tumors, and the changes which take place in certain new growths of apparently benign type, but in which malignant characteristics develop. Such conditions, he says, are usually loosely and falsely grouped under the heading of malignant degenerations.

102. **Ingrown or Overgrown Toe-Nail.**—Gessner proposes a modification of the Van Meter incision, consisting in the substitution of a hexagon for the diamond excision. The edge of the nail is paralleled by a cut running its full length, about ¼ of an inch from it. From ¼ to ½ of an inch further from the nail another cut is made, parallel with the first and equally long. A V-shaped incision joins the first two cuts at each end and completes the hexagon. The removal of the skin and fascia between these lines of incision leaves a gap, suture of whose edges pulls the skin away from the nail edge evenly throughout its entire extent.

Detroit Medical Journal

April

105 Acute Postoperative Paresis. J. A. McMillan, Detroit.
106 Facial Paralysis. W. A. Potter, Detroit.

Medical Fortnightly, St. Louis

April 25

107 *Mattoids (Cranks). A. Macdonald, Washington, D. C.
108 Gases in Their Relation to the Body. A. L. Benedict, Buffalo, N. Y.
109 In the Twilight. C. E. Warren, North Easton, Mass.

107. **Mattoids.**—This is the term which MacDonald proposes for the word "cranks." He says that the word crank has been so misused, if not abused, that the term "mattoid" is preferable. The mattoid, then, is an abnormal person, characterized by want of balance, eccentricity or egotism. He is usually sincere and insists on his ideas, which are generally extreme and frequently absurd. He is generally sane, but may be semi-insane, and sometimes insane. He is usually above the average, sometimes showing talent, but rarely genius. He often has a distorted view of life, leading him into all kinds of uncertainties, inconsistencies and vagaries and he is frequently called odd, queer, strange, freakish and the like. Mattoids show defects and disproportion in character indicating as much talent in one direction as they do little in another. There is often a nervous element which gives force and energy. They may be gifted in speech, art and poetry, but deficient in judgment, showing no continuity and unity of direction in their lives. They often have altruistic but wild theories, utopian ideas or absurd projects, which they express in public speeches or books. But they are generally incapable of accomplishing anything. The mattoid may pass from one mental condition to another, and in the course of his life manifest all of the characteristics mentioned above. He is often on the borderline between sanity and insanity. He is more liable to get into trouble, commit crime or become insane than people in general.

American Medicine, New York

April

110 Selection of Patients for a Tuberculosis Sanatorium. C. B. Slade, New York.
111 Medicine and Character. S. H. Brown, Philadelphia.
112 Neurasthenia Gastrica (Nervous Dyspepsias of Loube). A. A. Robinson, Ogden, Utah.
113 Pathology of Anemia. W. H. Boese, New York.
114 Sir Walter Raleigh's Royal Cordial. J. Knott, Edinburgh, Scotland.
115 Twice Wounded by Rattlesnakes; Recovery. H. Crutcher, Roswell, N. M.

Boston Medical and Surgical Journal

May 4

116 School Inspection in Small Towns. A. T. Cabot, Boston.
117 *Difficulties and Limitations of Diagnosis in Advanced Cases of Renal Tuberculosis. H. Cabot, Boston.
118 An Analysis of Forty-Six Cases of Prostatectomy. L. Davis, Boston.
119 Five Successive Cesarean Sections on the Same Woman, the Fifth on Twins. C. M. Green, Boston.
120 A Summer Service in the Weld Ward of the Massachusetts General Hospital. C. J. White, Boston.

117. **Renal Tuberculosis.**—In the light of recent experience with spinal anesthesia in cases of damaged kidneys, Cabot is inclined to regard this as the anesthesia of election, at least for the exploratory part of the operation. Anesthesia extending well up to the costal margin is readily obtained and is entirely satisfactory for the exposure and opening of the ureters. The urine can then be collected and conclusions drawn without subjecting the patient to the strain of general anesthesia. Should nephrectomy be decided on, it may either be done at once under a general anesthetic, or postponed to a future occasion. Cabot has not found spinal anesthesia satisfactory for nephrectomy and does not advise its use, but for the preliminary determination of the kidney function, he believes it will lower the mortality in properly selected cases.

Journal of Cutaneous Diseases, New York

May

121 Acrodermatitis Chronica Atrophicans and Diffuse Scleroderma with Associated Morphea Atrophica. K. Herxheimer and W. Schmidt.
122 Historical Sketch of Leprosy in the United States. S. Pollitzer, New York.
123 The Sociologic Aspects of Leprosy and the Question of Segregation. I. Dyer, New Orleans.
124 *Experimental Leprosy and Its Bearing on Serotherapy. C. W. Duval and F. B. Gurd, New Orleans.
125 Widespread Lupus Erythematosus with Associated Papulo-Necrotic Tuberculide (?). U. J. Wile, New York.

124. A similar article by the same authors was published in the *Archives of Internal Medicine*, February, 1911, and abstracted in THE JOURNAL, March 25, 1911, p. 925.

Archives of Ophthalmology, New Rochelle, N. Y.

May

126 Dacryocysto-Rhinostomia (Toti's Operation). E. Török, New York.
127 Indications for Operation in Heterophoria and Squint. A. Duane, New York.
128 A Case of Floating "Soemmering's Crystalline Mass" in the Vitreous. K. Wessely, Wuerzburg.
129 Action of Salvarsan on the Eye. F. J. Flemming, Berlin.
130 Salvarsan in Ophthalmology. O. Schnaudigel, Frankfort a.-M., Germany.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

April 22

1 The Kinks which Develop in Our Drainage System in Chronic Intestinal Stasis. W. A. Lane.
2 Chronic Intestinal Stasis Treated by Short-Circuiting or Colectomy. H. Chapple.
3 Arteriosclerosis and the Kidneys. Sir C. Allbutt.
4 Interdependence of the Circulatory and Respiratory Systems. I. McKenzie.
5 Hepatic Distomiasis (Sheep Rot) in Man. G. R. Ward.

Lancet, London

April 22

6 *Sensibility of the Alimentary Canal in Health and Disease. A. F. Hertz.
7 The Declining Birth-Rate. F. E. Fremantle.
8 *Railway Accidents with Special Reference to Cerebral Fat Embolism. R. J. Godlee and G. E. O. Williams.
9 Ocular and Visual Conditions in Medical Cases. J. Taylor.
10 *Direct Bronchoscopy. H. Tilley.
11 *Value of Ionization in Inflammatory Diseases of the Lower Bowel. J. C. Webb.
12 *Ascites Treated by Lymphangioplasty. R. A. Stoney and T. G. Moorhead
13 Measles: Its Treatment and Prevention.
14 *Acute Hemorrhagic Pancreatitis; Operation; Recovery. E. Gillespie.
15 Case of Pericarditis (Tuberculous) with Effusion. J. Rae.

6. **The Alimentary Canal in Health and Disease.**—The results of his experiments, made to determine the sensibility of the esophagus, stomach and intestines to tactile, thermal and chemical stimulation, are detailed by Hertz. He says that the alimentary canal from the commencement of the esophagus to the junction of the rectum with the anal canal is completely insensitive to tactile stimulation. The introduction of ice-cold water or hot water at any temperature between 40 and 50 C. into a normal stomach produced no sensation of any sort. His observations show that 0.4 and 0.5 per cent. hydrochloric acid, introduced into the esophagus or the empty stomach of normal individuals through a tube, produces no sensation of any kind. The introduction of 0.5 per cent. hydrochloric acid through the gastrostomy wound into the stomach of patients with esophageal stenosis also produces no sensation. It is thus clear that the pain, which is often associated with excess of free hydrochloric acid in the stomach, cannot be due, as has generally been believed, to the excess of hydrochloric acid alone, as it is certain that as much as 0.5 per cent. free hydrochloric acid is never present in the stomach. Moreover, many cases in which excess of free and of active hydrochloric acid is discovered by chemical analysis are not associated with pain or other gastric symptoms, and the excess present in painful conditions may persist after the pain has been completely relieved by treatment. It may be concluded, therefore, that the presence of an excessive quantity of hydrochloric acid in the stomach is only one manifestation of a disease, in which pain is another, and tha it is not the cause of the pain. In six cases of gastric ulcer, in all of which the diagnosis was confirmed by operation, 4 ounces of 0.5 per cent. hydrochloric acid introduced into the empty stomach by a tube produced no sensation whatever. The same result was obtained in another case in which a mixture of hydrochloric acid with pepsin was used. These observations show that, contrary to the common belief, contact with free hydrochloric acid is not the direct cause of the pain in gastric and duodenal ulcer. That the acid is, however, in some way connected with the production of the pain there can be no doubt, as rapid relief always follows the administration of an alkali.

Crême de menthe, introduced by a tube into the empty stomach, gives rise to a sensation of warmth which may occur immediately, but more frequently only develops in the course of a minute or two. A similar result was obtained with the 48 per cent. alcohol, but not with peppermint water, so that it is the alcohol and not the peppermint which produces the sensation after the liquor is introduced into the stomach. Crême de menthe also produces an immediate burning sensation in the epigastrium when poured through a tube into the lower end of the esophagus. This is a much stronger sensation than that produced in the stomach, but it is impossible to distinguish the locality of the two. The burning sensation in the esophagus is produced by the alcohol, as the 48 per cent. solution has the same effect, while the peppermint water, if warmed to the body temperature, produces no sensation. It may be concluded, therefore, that the immediate burning sensation produced by the liquor is in the esophagus, and that the subsequent feeling of warmth is in the stomach. Both are due to the alcohol alone. It was found that the lower *end of the esophagus is so sensitive to alcohol* that special precautions had to be taken in testing the sensibility of the stomach in order to prevent a few drops reaching it when the tube was withdrawn. Alcohol in a strength greater than 25 per cent. gives rise to a sensation of burning when applied to *the mucous membrane of the anal canal*, but when introduced into the pelvic colon through a sigmoidoscope or into the more proximal parts through a colostomy opening, a strength of 50 or even 90 per cent. is required. After a sensation of heat has been produced, the repetition of the experiment a few minutes later may have no effect, owing to the protection of the mucous membrane by mucus, which is secreted as a result of the irritation caused by the alcohol. Glycerin produces no sensation when applied to the rectal mucous membrane; the characteristic sensation occurs only when it is applied to the anal canal. The sensation produced by a glycerin enema or suppository must, therefore, be due to a small quantity escaping from the rectum into the anal canal, and the defecation reflex to which it gives rise probably originates in the anal canal, and not, as formerly believed, in the rectum.

8. **Railway Accidents.**—Two cases of cerebral fat embolism are reported by Godlee and Williams. Both patients presented similar symptoms and signs. They both had fractures of the thigh, in one case a comparatively simple fracture, and in the other two simple fractures, together with some crushing of the bones about the knee-joint and a lacerated and contused wound of the foot. The patients were both given chloroform for the setting of the fractures. Within about twelve hours both went into a comatose state more or less suddenly, without any previous noticeable pulmonary distress, the temperature rose rapidly, the pulse was of low tension and rapid, and there were no localizing signs in the nervous system pointing to a lesion in any particular part of the brain. Both might have been thought to be cases of cerebral compression if it had not been for the character of the pulse. One patient was trephined over the right side because he had evidence of injury to the skull on that side. The authors do not believe that the operation hastened death, the only cause of which that could be demonstrated was fat embolism of the brain. The other patient recovered to a slight extent from what seemed to be an almost hopeless condition, and his death was no doubt partly due to a secondary bronchopneumonia; in this case also some of the typical signs of cerebral compression were absent.

Attention is called to three points of especial interest. 1. The difference in the extent of the original injury in the two cases. Whereas one might have expected fat embolism to occur in the case where there were several fractures, some of which were of a crushing nature, there was nothing about the simple fracture in the other case to suggest the likelihood of its occurrence, or at all events of its causing any grave symptoms. 2. The absence of dyspnea or other symptoms of pulmonary embolism in one case, and the fact that the other patient only complained that his bandages felt tight. 3. The resemblance superficially of the condition to that of cerebral compression; the characteristic pulse of compression was never observed. There were never any signs in the nervous system pointing to a localized injury to the brain.

10. **Direct Bronchoscopy.**—Two cases are cited by Tilley, indicating the value of this method for the detection and removal of foreign bodies impacted in the lower air passages.

11. **Ionization in Inflammatory Diseases of Lower Bowel.**—Webb details his results obtained in the treatment of colitis by the ionization of zinc salts in the bowel. Of fourteen patients so treated, only one was not cured or benefited.

12. **Ascites Treated by Lymphangioplasty.**—In the case reported by Stoney and Moorhead, the introduction of artificial silk lymphatics, according to the method suggested by Sampson Handley in 1910, was followed by disappearance of the ascitic fluid. The existence of chronic fibrous peritonitis with hepatic cirrhosis was demonstrated at the operation. The authors do not claim that the improvement which occurred is necessarily the result of the lymphangioplasty, as ascites of the type here presented may disappear spontaneously (as occurred for a time in this case during the first stay in the hospital), or may disappear after a simple laparotomy. The fact, however, that some fluid reaccumulated after the operation suggests that the mere laparotomy was not of itself the cause of the later improvement, but rather that the reaccumulation took place prior to the establishment of an efficient circulation via the silk lymphatics, and that once a sufficient circulation was attained no further transudation accumulated.

14. **Acute Hemorrhagic Pancreatitis.**—The case reported by Gillespie shows the features which have been well termed "an abdominal catastrophe." There was a confused picture of shock and of hemorrhage, so much so that but for the localization of the pain to the upper abdomen and the history of regular menstruation, the diagnosis would have been that of a ruptured extra-uterine pregnancy. Rigidity of the recti was present, but it was neither so marked as in cases of perforation, nor so well defined as has been insisted on by other observers. There was nothing which could be called distention, but it is of interest to note that diminution of liver dulness was present. The onset was definitely gradual; the pain increased in intensity until it was so severe as to attract attention. No light is thrown on the obscure question of causation. The abdomen was opened above the umbilicus by a vertical incision, and separation of the fibers of the left rectus. The lesser sac was at once seen to be filled with dark blood. No fat necrosis was observed. The gastrohepatic omentum was freely opened and the blood was evacuated. The peritoneum over the pancreas was freely torn and more blood removed. The lobules of the pancreas showed up a light yellow against the effused blood. The gall-bladder and the bile passages were palpated but nothing abnormal was found. The patient's condition was so serious that no further examination was attempted. Gauze was passed down to the pancreas and packed along it from tip to head. A rubber tube was also passed down beside the emerging piece of gauze. The abdomen was closed in a single layer.

Clinical Journal, London

April 19

16 Treatment of Nephritis. F. J. Smith.
17 Clinical History and Treatment of the Less Obvious Types of Gummata. H. Curtis.

British Journal of Children's Diseases, London

April

18 *The Oculo-Motor Type of Polioencephalitis. S. Stephenson.
19 Chronic Lung Affections in Children. J. E. H. Sawyer.
20 Hydatid Cysts of the Liver in a Boy; Operation. A. J. Cleveland and J. Burfield.

18. **Oculomotor Type of Polioencephalitis.**—For some years Stephenson has observed a group of cases in children, the chief characteristic of which is the sudden onset of strabismus at an age when ordinary squint is not altogether common. The cases are encountered in children often of tender age. The condition may arise without obvious cause. On the other hand, it may be observed after some childish ailment, as scarlet fever or measles, or an injury, a fright, or some trifling operation, as vaccination or circumcision. The child, often apparently in usual health, is put to bed, and on awakening next morning is found to present squint. Stephenson's observations lead him to conclude that the oculomotor symptoms in these cases depend on an acute focal encephalitis, quite analogous with the better-known forms of that disease. He has seen twenty-eight such cases, all the patients being under 6 years of age, and half of the number under 1 year. The condition was associated comparatively seldom with other symptoms indicative of a cerebral disorder. Zymotic diseases (measles, 2; scarlet fever, 1; influenza, 1; small-pox, 1; pertussis, 1) appeared to be important factors in its causation. Although the paralysis may affect any of the extrinsic muscles of the eyeball, yet in three-fourths of the cases, the external rectus muscle alone is involved. The extrinsic musculature of the eye is seldom attacked. Stephenson says that the common form of encephalic strabismus is very apt to be confused with ordinary concomitant convergent strabismus.

Medical Press and Circular, London

April 19

21 Etiology and Incidence of Heart Disease in Regard to Prognosis. W. E. Wynter.
22 Alcohol and Insanity. F. W. Mott.
23 Postyén, a Thermal Bath for Rheumatism and Gout. A. Erdos.
24 Tuberculous Meningitis in New-Born Infants—the Somnolent Form. M. Lafarcinade.

Archives des Maladies du Cœur, etc., Paris

April, IV, No. 4, pp. 209-272

25 The Heart Rhythm and Hyperpnea. (Pseudo-bradycardie hyperpnéique par rhythme couplé.) L. Gallavardin.
26 The Large Mononuclear Cells in the Blood. (Le grand mononucléaire du sang.) A. Coic.

Bulletin de l'Académie de Médecine, Paris

April 4, LXXV, No. 14, pp. 463-476

27 Curable Myocarditis. (Les myocardites atténuées et curables.) C. Fiessinger.

Presse Médicale, Paris

April 8, XIX, No. 28, pp. 277-292

28 *Treatment of Enlarged Tonsils. (Amygdalectomie.) G. Mahu.
29 *Acidosis and Diabetic Coma. M. Labbé and L. Violle.

April 12, No. 29, pp. 293-300

30 Hemolytic Jaundice. (L'ictère par hémolyse.) Debove.
31 Wire Netting to Strengthen Casts. (Emploi de la toile métallique moulée et enrobée dans l'exécution des appareils d'immobilisation.) R. Danis.

the organism with acids. None of the mineral acids induced with thirty-six illustrations.

29. **Acid Intoxication and Diabetes.**—Considerable experimental investigation by Labbé and Violle has led to results confirming the assumption of the acidosis as the main factor in diabetic coma, but the special toxicity of the acids in question evidently adds to the injurious effects of the flooding of the organism with acids. None of the mineral acids induced any tendency to coma in the animals, but the organic acids, such as butyric, lactic, propionic and beta-butyric acids all had marked though variable power to induce coma. The acids free from a secondary alcoholic action, such as butyric and propionic acids, displayed the most powerful coma-producing action. The research confirms the importance of alkaline treatment of diabetic coma and in prophylaxis.

Semaine Médicale, Paris

April 19, XXXI, No. 16, pp. 181-192

32 *Test of Kidney Functioning by Comparison of Urea Content of Blood and Urine. L. Ambard and O. Moreno.

32. **Test of Kidney Functioning by Comparison of Urea Content of Blood and Urine.**—Ambard and Moreno present a formula based on the proportion of urea in the blood, the proportion of urea eliminated in the urine, the body weight, and the concentration of the urine as an index of kidney sufficiency.

Archiv für Gynaekologie, Berlin

XCIII, No. 3, pp. 413-676. Last indexed April 22, p. 1231

33 *Operative Treatment of Inflammatory Disease of Ovaries, Tubes or Pelvic Connective Tissue. (Die entzündlichen Adnex- und Beckenbindegewebserkrankungen.) H. Thaler.
34 *Sarcoma of Female Urethra. O. Nebesky.
35 *Intermenstruation Colic. (Zur Pathologie und Therapie des sogen. Mittelschmerzes.) A. Theilhaber
36 *Experimental Research on Measures to Protect Against Peritoneal Infection. O. Hoehne.
37 Cysts in the Uterus. O. Frankl.
38 Adenomyoma of the Ligament of the Ovary. O. Frankl.

33. **Inflammatory Disease in the Pelvis.**—Thaler reviews the experiences at Schauta's clinic in Vienna with 6,000 cases of inflammatory processes around the uterus. Operative treatment is indicated, he says, only after failure of a course of conservative treatment, except where pus has to be let out. When operative measures become necessary, extirpation of the organ involved is necessary; palliative measures are useless. The appendix should be removed on suspicion of trouble or adhesion to the inflammatory process elsewhere. The radical operations alone result in permanent cures; whenever conditions require draining, any conservative operation, leaving the uterus, is distinctly contra-indicated, as also when there is a tendency to excessive genital hemorrhage. Over 93.5 per cent. of the 828 patients given radical operative treatment were permanently cured, and the symptoms of the premature menopause were annoying in only a few cases. The only exception to the rule for radical operative treatment is in case of tuberculosis of the genital organs. Only five of the sixteen patients with tuberculosis of an ovary or tube were permanently benefited by the radical operation and the postoperative mortality was 25 per cent. In the experience of the last sixteen years not a single case has been encountered of a primary ascending tuberculous process in the internal genitals. In 40 of the total 6,179 cases the inflammatory process in the adnexa was evidently secondary to an extra-uterine pregnancy.

34. **Sarcoma in Female Urethra.**—Nebesky adds another to the fourteen cases on record, and states that four of the total fifteen were free from recurrence at last accounts. The interval since the operation is nine years in his case; the patient is a farmer's wife, now 48 years old. In two cases an existing pregnancy was apparently not disturbed by the operation. Flatau provided for comparative continence of urine by suturing the neck of the bladder in the vagina which is kept packed with gauze. Nebesky sutured the stump of the urethra to the vulva.

35. **Menstrual Pains Between the Periods.**—Theilhaber ascribes the pains to spasmodic contraction of the musculature of the uterus, similar to spasm of the cardia and pylorus. Treatment on this basis has always proved effectual in his experience, that is, by enlarging the internal os. It is not enough merely to dilate it; a permanent cure is ensured only by slitting the os, or, better yet, resecting a small strip. He has done this in 100 cases of dysmenorrhea in the last twelve years and 66 per cent. of the patients were entirely cured and 17 per cent. were much improved. In the others who were not benefited, the trouble must have been more of a hysteric nature. Success was constant in the five intermenstrual colic cases in which he has applied this same measure.

36. **Protection of Peritoneum Against Infection.**—Hoehne reports experiments on four guinea-pigs and eighty-five rabbits which confirm the fact of a reactive inflammation in the peritoneum after injection of oil or other irritating substance. When this peritonitis is of only a few hours' standing, it favors absorption of germs by the peritoneum, but if it is of twenty-four hours' or a few days' standing it checks absorption from the abdominal cavity very materially or prevents it altogether for many days and weeks. Germs thus vegetating in the abdominal cavity and not able to pass thence into the general circulation, rapidly die off, even the most virulent, in the course of four days. The peritonitis once installed summons to the region such powerful bactericidal forces that the invading infectious germs are soon conquered. Small intraperitoneal injections of olive oil, sesame oil or camphorated oil, up to 10 c.c. proved entirely harmless for the rabbits, while larger amounts, 20, 50 or 100 c.c. sometimes induced fat embolism in the lungs or severe local or general injury.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 10, XLI, No. 11, pp. 385-416

39 *Injection and Infiltration Treatment of Sciatica. F. Barth.

39. **Sciatica.**—Barth reviews the modern methods of treating sciatica and their results, preferring, himself, a combination of the Hay and Alexander technics, that is, injection of 10 c.c. of physiologic salt solution in the nerve at a point between the tuberosity of the ischium and the greater trochanter, or at some point where the sciatic is most sensitive, supplementing this with bloodless stretching of the nerve. The main point is a correct diagnosis. Only with sciatica does pain occur as the patient strains the abdominal muscles; if there is pain in the calf or buttocks as the patient coughs or sneezes, sciatica may be regarded as certain. Another sign is a tendency to lordosis in the lumbar vertebræ as the trunk is bent forward, but no tendency to lordosis otherwise. The patient instinctively resists the tendency to straighten the spine as liable to induce pain. A still more important sign of sciatica is the loss of the Achilles reflex. The knee-jerk is not affected by sciatica.

Deutsche medizinische Wochenschrift, Berlin

April 13, XXXVII, No. 15, pp. 673-720

40 *Significance for Diagnosis and Prognosis of Leukocytosis with Inflammation. (Bedeutung der entzündlichen Leukozytose.) Sonnenberg, E. Grawitz and K. Franz.
41 Syphilis in Rabbits After Intracardial Inoculation. (Syphilitische Allgemeinerkrankung beim Kaninchen durch Intrakardiale Kulturimpfung.) H. Sowade.
42 The So-Called Paradoxic Wassermann Reaction. C. Rasp and E. Sonntag.
43 Chemical Identity of Antibody Production with Cell Degeneration. (Chemische Identität der Antikörperbildung mit der Zelldegeneration.) R. Waldvogel.
44 Preventive Antiplague Vaccination. (Ueber die Bereitung von Impfstoff der "Deutschen Pestkommission 1899" zu Massenimpfungen bei Gefahr der Annäherung einer Lungenpestepidemie im Jahre 1911.) Martini.
45 *Salvarsan in Eye Disease. (Salvarsan bei Augenhintergrundleiden.) M. Falta.
46 Tin Poisoning. (Ueber Zinnvergiftung.) T. Günther.

40. **Leukocytosis in Diagnosis and Prognosis.**—Sonnenburg declares that physicians should adopt the leukocyte count as a routine measure. He applies to it what was said forty years ago in regard to the importance of taking the tempera-

ture, insisting that it is equally indispensable "because every phenomenon taking place in the diseased body should be studied; because it can be studied with a precision obtainable with few of the other phenomena; because it can be neither simulated nor concealed; because any deviation from normal findings indicates disturbance; because it reveals the success of therapeutic measures and warns of injurious influences, and is an index of the transition from one stage of the disease into another, and, finally, because it often announces the impossibility of recovery." These statements, made originally in regard to the clinical thermometer, are equally *true*, he says, of the leukocyte count and the neurophil blood-picture. It is a great advantage to know the leukocyte count; how the physician interprets the blood findings for diagnosis and prognosis in the individual case is his affair, but he should not neglect this valuable aid.

To show its importance, Sonnenburg reports ten typical cases of appendicitis, as the peritoneum reacts more readily and more intensely, perhaps, to inflammation than other organs. A leukocyte count of 20,000 and "Arneth" 20 per cent. In one case paralleled the acute appendicitis with gangrene, mild infection, good resisting powers and favorable prognosis, while in another case the leukocyte count of 15,000, Arneth 47 per cent., indicated severe infection, and the child died as the Arneth rose to 66 per cent. In another case the clinical picture was mild but the leukocyte count was 30,000, Arneth 6 per cent. Operation was done in this case on the leukocyte count alone, and the findings confirmed the grave danger of delay. In another case the clinical manifestations were serious but the leukocyte count was only 9,000 and the Arneth 12 per cent. The appendix had perforated, but the pus was completely encapsulated. [The Arneth formula has been described in THE JOURNAL, Dec. 25, 1909, page 2180, and an improved technic was given Jan. 8, 1910, page 124].

Grawitz' experimental research has confirmed the fact that muscular strain will raise the leukocyte count. This explains the leukocytosis of from 20,000 to 30,000 found sometimes with normal deliveries—the result merely of the violent muscular contractions of the uterus. The muscular effort in whooping-cough may also explain the leukocytosis in this disease. The rigid contraction of the abdominal musculature also plays a part in raising the leukocyte count with incipient peritonitis. These physiologic influences on the leukocyte count from digestion and muscular effort should be duly estimated in interpreting the leukocytosis of inflammation and febrile diseases, especially in differentiating typhoid, suppuration and pneumonia. The intensity of the leukocytosis corresponds in general to the severity of the infection; the most correct index of this, however, is the hemolytic action on the red corpuscles. He insists that the leukocyte reaction cannot be accepted under all circumstances as an index of the general vital energy of the organism.

Franz discusses the leukocyte count from the standpoint of the gynecologist and obstetrician, not ascribing much importance to it.

45. **Unfavorable Experiences with Salvarsan in Syphilis of the Eye.**—Falta warns that if the optic nerve is already diseased, salvarsan is liable to do harm. With syphilitic disturbance of the retina, chorioid and vitreous body, it is much safer to apply the ordinary mercury and iodid treatment, giving salvarsan only in case this fails. In his two cases as also in one of Finger's, the aggravation of the disturbances in the depths of the eye under salvarsan did not retrogress when mercury was given; under other conditions mercury generally promptly controls disturbances of this kind. The salvarsan seemed to have rendered them refractory to the ordinary measures. He warns that salvarsan should never be given without careful examination of the eye. He conferred with Ehrlich in regard to his first case, and Ehrlich advised a cautious repetition of the salvarsan injection, but as Falta had met with his second similar and severer case in the meantime, he did not dare to risk giving the salvarsan again. In the first case bilateral neuroretinitis had existed for a time and became aggravated under salvarsan but improved somewhat under mercury. In the other case an acute neurochorioretinitis increased under salvarsan, and it shows only slight improvement under mercury for nearly a *month* to date.

Medizinische Klinik, Berlin

April 16, VII, No. 16, pp. 597-640 and Supplement

47 *Septic Abortion. (Prophylaxe und Behandlung des septischen Abortes.) G. Winter.
48 Disease of Lower I[illegible] : Therapie der Erkrankungen des [illegible] G. Singer.
49 *Revulsion in Modern [illegible] bleitende" Verfahren in moderner Beleuchtung.) B. Bloch.
50 *Injury of the Kidneys from Salvarsan. (Ueber Nierenschädigungen durch Salvarsan.) R. Mohr.
51 Antiferment Method of Treatment of Suppurative Processes. H. Bolt.
52 Climate from Therapeutic Standpoint. (Grundlagen und Methoden heilklimatischer Beobachtungen.) K. Dove.
53 Efficacy of Induced Pneumothorax in Treatment of Certain Forms of Pulmonary Tuberculosis. C. Saugman.

47. **Prophylaxis and Treatment of Septic Abortion.**—Winter states that the septic cases form fully 27 per cent. of all abortion cases at his clinic (Königsberg) and he here analyzes 100 cases. The mortality was 13 per cent.; only 54 per cent. had a normal course. Study of this material teaches four lessons: 1. The first task is diagnosis. A temperature in the axilla over 38 C. (100.4 F.) is pathologic but it must not be forgotten that spontaneous abortion may occur in the course of an infectious disease, or that an infectious disease may casually occur along with an abortion. 2. The second task is to determine the extent of the infection. If the infection has passed beyond the uterus, decomposition of the uterine content is of secondary importance. Any attempt to evacuate the uterus is liable to do more harm than good; many a septic abortion has terminated fatally on account of this alone. In general practice many errors have been committed in this line, either from disregard of the extra-uterine infectious conditions or from the mistaken view that removal of the primary focus will have a favorable influence on the secondary foci. Before attempting active treatment of the abortion, the fact that the infection is limited to the uterus must be demonstrated. 3. The septic abortion diagnosed and the vicinity of the uterus still free from infection, the further conduct of the case must depend on the bacteriologic findings except when hemorrhage forces immediate intervention. Bacteriologic examination of the secretions, taken from the depths of the vagina, may show the presence of hemolytic streptococci, and it is wise to wait even twenty-four hours for the results of this examination, as hemolytic streptococci reveal that the trouble is an acute infectious endometritis in connection with an abortion. Here the danger with active treatment is very great. No local measure should be attempted, but everything done to increase the resistance; ergot is useful by limiting absorption from the contracted uterus wall and promoting expulsion of the relics of the ovum. This expectant treatment is tedious but the advantages are very great. In five such cases in his experience, the hemolytic streptococci spontaneously disappeared by the end of 4, 7, 11 or 23 days; then the uterus was safely evacuated without harm. If bacteriologic examination shows only ordinary streptococci, staphylococci, colon bacilli or saphrophytes, the uterus can be evacuated at once. Serious consequences need not be anticipated. 4. In active treatment it is important to disinfect the vagina and uterus as thoroughly as possible, rinsing out the germs thoroughly by prolonged irrigation of the uterus, carefully refraining from anything that might injure the vitality of the tissues or open fresh wounds. Injury of the decidua is less harmful than injury of the musculature, but any erosion opens the portals for invasion by the germs. The use of the curette should not be permitted with septic abortion. Among other points which Winter emphasizes is that flowing blood is much less likely to become infected than stagnating blood and secretions. This should be borne in mind when considering tamponing of the vagina.

49. **Revulsion.**—Bloch explains by the light of allergy the success obtained by physicians of the olden times with revulsion measures. Their facts were sound, like those reported seven years ago by Brocq, showing the benefit of revulsion in certain conditions of chronic intoxication. Bloch reports a case in which a scalp disease developed into a deep parasitic sycosis. After weeks of ineffectual treatment of all kinds, the patient was inoculated on both forearms with a culture of *Achorion quinckeanum*, a fungus closely allied to the trichophyton fungus in question but notable for its power to induce intense allergy. The success surpassed anticipation, the inoc-

ulation evidently transforming conditions so that all the morbid processes retrogressed. The new infection allergized the organism, and enabled it to throw off both the old and the new infection.

50. **Injury of the Kidneys from Salvarsan.**—In this communication from the medical clinic at Leipsic in charge of von Strümpell, Mohr reports three cases of serious injury of the kidneys under salvarsan. In one case severe collapse and diarrhea followed intravenous infusion of the salvarsan, with other symptoms of arsenic intoxication and acute injury of the kidney. It was evidently an acute degeneration of the parenchyma, such as is found in injury of the kidney from corrosive sublimate. The changes had nothing in common with nephritis but were probably the same as those noticed in the sections of the kidney of a young man who died two months after salvarsan treatment (No. 5 of Ehrlich's compilation). The disturbances in Mohr's case rapidly subsided, confirming the reactive nature of the disturbances and the rapid elimination of the arsenic when the salvarsan is given by intravenous injection. The disturbances in the two other cases followed intramuscular injection of the salvarsan and they were evidently a true nephritis following on the toxic degeneration of the parenchyma. In the first case the severe hemorrhagic nephritis has grown constantly worse and a fatal termination is impending. This patient is a young woman and the urine was normal and there was no history of kidney trouble, but two months after the intramuscular injection of 0.5 gm. salvarsan the severe nephritis was in full development. In the third case polyneuritis developed with symptoms of nephritis in less than three weeks after the injection of 0.7 gm. of salvarsan. These cases seem to confirm the assumption that the salvarsan undergoes toxic transformation in the muscular deposits. They teach the necessity for watching over the kidneys after salvarsan treatment as trouble may manifest itself after a long period of latency. Mohr refers also to instances of injury of the kidney under salvarsan reported by Géronne, Jadassohn, Scholz and others, besides the case mentioned by Ehrlich.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

54 *The Roentgen Rays in Gynecology. A. Döderlein.
55 Prolapse of the Placenta. (Vorfall der Nachgeburt.) E. Basset.
56 norrhea in Women. (Versuche zur weiblichen Gonorrhoe.) F. Heinsius.
57 * Exercises During Pregnancy and the Puerperium. (Physikalische Therapie in Schwangerschaft und Wochenbett.) F. Kirchberg.
58 Puncture of Ovarian Cysts. A. Littauer.
59 *Operative Treatment of Cystocele. M. Brenner.
60 Camphorated Oil in Treatment of Unencapsulated Suppurative Peritonitis. A. Krecke.
61 The Vaginal Method in Gynecology. D. v. Ott.

54. **Roentgen-Ray Treatment in Gynecology.**—Döderlein says that he regards the use of the Roentgen rays in therapeutics as still an experiment, but that this method of treatment is giving fine results in certain cases, especially in climacteric hemorrhage for which neither palpation nor microscopic examination can discover whether the hemorrhage is the result of degeneration of the vessels in the uterus or of disease of the ovaries, myometrium or endometrium. All other methods of treatment generally fail unless the apparently sound internal genitals are removed when the hemorrhages are weakening the patient to such an extent that it is impossible to wait for the natural retrogression of the genitals with the approaching menopause. It is in this group of cases that the Roentgen rays show themselves supreme; in the simplest and most harmless manner the internal genitals are hastened into the menopause stage by exposures of the ovaries to the rays. They act in such an elective manner that the internal secretion of the ovaries does not seem to be affected. Döderlein has thus treated twelve women with an interval since of over six months. They were women between 40 and 50 with violent hemorrhages, the hemoglobin being reduced to only 30 per cent. in some, and the red count very low. A very few exposures sufficed to put an end to the ovarian functioning at fault and the general health promptly recuperated. The closer to the natural menopause, the more rapidly effectual the Roentgen rays. Reifferscheid has also reported similar gratifying results in this class of cases. In younger women this treatment has proved effectual in curing dysmenorrhea, but there is danger in the young of malformation of the embryo in conception later. Intense vulvar pruritus, rebellious to all other measures, subsided completely in Döderlein's two cases of this kind in women 29 and 56 years old. The danger of cancerous degeneration of myomas and of exacerbation of the hemorrhages from a myoma, close the door practically to Roentgen-ray treatment of myoma. Albers-Schönberg's fatalities with it teach that at least patients with 40 per cent. hemoglobin and great losses of blood from myomas must be excluded from this treatment.

57. **Massage and Gymnastic Exercises During Pregnancy and the Puerperium.**—Kirchberg does not hesitate to state that constipation yields invariably to a correct course of massage and exercises, including constipation in pregnancy and the puerperium. He describes a number of exercises and massage manipulations, the patient aiding by deep breathing in jerks, three pauses in each inspiration and expiration, drawing in the breath rapidly, holding it and then slowly expelling it. The staccato deep breathing and pauses exercise both diaphragm and abdominal muscles and promote the circulation, thus warding off varices. Among other useful exercises for the pregnant woman is to have her lie on her back, twist, bend and lift the legs. Twisting the legs from side to side with the knees bent, exercising against resistance, acts particularly on the abdominal muscles. He ascribes the development of the breasts to the condition of the pectoralis muscles, and deep breathing and other exercises to develop these muscles, he says, aid in developing the bust, which massage of the breasts alone is unable to accomplish. Frequent reclining with the pelvis raised will aid in curing a tendency to varices and hemorrhoids. Any rise in temperature, he says, directly contra-indicates massage under any conditions. With uncontrollable vomiting, massage and exercise are indispensable adjuvants.

59. **Treatment of Recurring Cystocele.**—Brenner raises the mouths of the ureters in the bladder, detaching them from their base in the wall, and then draws a catgut suture through the tissues beneath each, tying the ends to draw the tissues up into a stout fold below each ureter mouth. The catgut takes hold at the same time of the stout connective tissue between the ureters and part of the ligament, thus obtaining a firm hold. The operation is done by a laparotomy and proved successful in the case reported of inveterate recurring cystocele of obstetric origin.

Münchener medizinische Wochenschrift

April 11, LVIII, No. 15, pp. 777-832

62 *Immobilization of Lung by Rear Resection of Ribs. (Neue Methode zur Verengerung des Thorax bei Lungentuberkulose.) M. Wilms.
63 Radium Emanations in Therapeutics. J. Strasburger.
64 Bacteriologic Research in Puerperal Fever. (Ueber bakteriologische Untersuchungen und ihre Methoden bei Febris puerperalis. II.) H. Schottmüller.
65 *Estimation of the Pulse Values. (Die neuen Methoden der dynamischen Pulsdiagnostik, ohne Mathematik dargestellt.) T. Christen.
66 *The Phonendoscope for Testing the Hearing. (Einige akustiche Untersuchungen mit Hilfe des Endophonoskops.) H. Streit.
67 Technic of the Wassermann Reaction. P. Schmidt.
68 Spastic Dislocation of Hip Joint. (Ueber die "Spastische Hüftluxation" und die Veränderungen des Hüftgelenkes bei spastischen Zuständen der unteren Extremitäten.) H. Weber
69 *Nephritis After Salvarsan Treatment of Syphilis. (Beobachtungen über Nephritis nach Salvarsanbehandlung.) F. Weiler.
70 *Salvarsan in Pneumonic Plague. O. Schreyer.
71 General Anesthesia by Intravenous Injection of Anesthetics. (Ueber intravenöse Narkose.) L. Burkhardt.

62. **Operative Compression of the Lung.**—Wilms found that the size of the half of the chest involved was materially reduced by resecting over an inch of the ribs close to their junction with the spine. This was easily done through three transverse incisions in the musculature of the back after a single lengthwise incision through the skin. The ribs not only slid backward after they were cut, but also slid downward, thus compressing the apex of the lung in particular. He has applied this measure in one case with excellent outcome. The patient was a young woman with tuberculosis of

the left upper lobe for fifteen years, recently showing signs of aggravation, with a tormenting cough, and 10 c.c. of sputum a day. Radioscopy showed a distinct cavity in this lobe, but the general condition was good. The patient ceased to cough by the end of the third week after the operation and there was no further expectoration. It had been intended to supplement this operation by dividing the ribs in front close to the sternum, but the desired result had been attained without this, so nothing further was attempted. Wilms reenforced the compression by strips of plaster, binding down a roll of gauze along the wound. The patient also lay on the affected side to enhance the compression of the chest. A compressive bandage might also be applied. He urges others to seek out the cases of chronic isolated indurated tuberculous processes liable to be benefited by immobilization of the lung and give this method a trial.

65. **Study of the Pulse.**—Christen declares that the old-fashioned method of palpation of the pulse is more reliable than the apparently more scientific method of sphymography. He has devised a method for registration of the features of the pulse which he claims presents with mathematical precision the volume of the blood and the force it displays in the pulse. The stasis curves thus obtained (*Stauungskurven*) take the place of palpation of the pulse, substituting an exact mathematical-physical method—energometry—which throws new light, he says, on the dynamic conditions in the circulation.

66. **Phonendoscope in Testing the Hearing.**—Streit stands the tuning fork on the base of the phonendoscope and then records the second when the patient, by raising his finger denotes that he has ceased to hear the tuning fork through the tube through which he is listening while the examiner is listening through the other tube. It is also possible to convey the sound through the Eustachian tube to the ear by this means, connecting the phonendoscope tube with a catheter.

69. **Injury of Kidneys from Salvarsan.**—The first of the three cases reported by Weiler is the same case of hemorrhagic nephritis described by Mohr and summarized above in abstract 50. Weiler's communication issues from the dermatologic clinic at Leipsic, in charge of Rille. The course of the nephritis in his three cases was more severe when the salvarsan had been given by intramuscular injection. He concludes with the remark that it is possible that the three individuals in question might have been especially predisposed to kidney trouble, but it is also possible that the kidneys in other patients may have suffered to a slight extent under the salvarsan treatment. Such injury may remain latent for a time and perhaps, if the salvarsan is given again or some other source of irritation develops, may manifest itself clinically later. He quotes Bornstein's finding of 0.0031 gm. arsenic trioxid in the kidneys and over twice this amount in the liver of a man dying two weeks after an intramuscular injection of salvarsan. Rille has also reported large amounts of arsenic demonstrable in the necrotic focus in the gluteal muscles at necropsy sixty-four days after an intramuscular injection of 0.7 gm. salvarsan. It is remarkable, he adds, that a few patients who developed albuminuria under mercury showed no signs of injury of the kidneys under salvarsan. Werther has reported a case in which a girl of 17 developed transient hemorrhagic nephritis after intravenous injection of 0.25 gm. salvarsan and it has recurred later in an acute transient form without further administration of salvarsan. Martius has reported an acute morbid process in a contracted kidney, the patient, a man of 39 with old changes in the kidney and arteriosclerosis, dying five hours after intravenous injection of 0.5 gm. salvarsan in 250 c.c. of fluid. In Treupel's experience, chronic nephritis on a syphilitic basis seemed to benefit by the salvarsan treatment, the albuminuria declining. He reports two cases in which traces of albuminuria developed after intravenous injection of the salvarsan, the only ones indicating possible injury of the kidney among his 250 cases. Sellei has reported two cases of latent nephritis aggravated by the salvarsan; in one of these there was albuminuria to six per thousand and hematuria the day after the intravenous injection of salvarsan, eight weeks after a subcutaneous injection of the same. The hematuria rapidly subsided but the albumin still amounted to two per thousand a week later.

70. **Salvarsan in Pneumonic Plague.**—Both of the two patients given salvarsan died, but one showed transient benefit.

Zeitschrift für Urologie, Berlin

April, V, No. 4, pp. 241-320

72 Means to Influence Infectious Processes in Urinary Passages. (Beinflussung der infektiösen Prozesse der Harnwege.) L. Casper and A. Citron.
73 Chromocystoscopy in Determination of Kidney Sufficiency. (Die Chromoureteroskopie in der funktionellen Nierendiagnostik.) B. A. Thomas (Philadelphia).
74 Gunshot Injuries of the Kidneys. (Zur Geschichte der Nierenschüsse.) E. Küster.
75 *Cerebral N[illegible] [illegible]obiling and Its Depressing Influenc[illegible] (Automobil und Sexualvermög[illegible])
76 Sound for Urethral Massage. (Eine "Rosenkranzonde" für Urethralmassage.) W. Tittinger.

75. **Automobiling Speed Mania and Impotency.**—Notthafft reports four cases of sexual impotency in wealthy married men fond of automobile speeding and one in a chauffeur. He knows of similar cases in the experience of others. The sexual depression developed in from three months to three years after special devotion to the sport. He ascribes the impotency to a cerebral neurasthenia from the nervous strain of the speeding; this assumption is sustained by recovery of normal tone when the automobilist refrains from speeding and drives his machine with ordinary prudence. Notthafft cites statistics which show that 12.1 per cent. of the 49,941 motor vehicles in the German empire were responsible for some accident serious enough to be reported to the authorities during 1909, a total of 6,063 accidents, involving 225 drivers, 487 other occupants of the car and 2,333 outsiders. He calculates that the driver of the car was to blame in 86 per cent. of all the accidents. The danger of speeding is not only for the public; the driver knows that he is taking his life in his hand and that he has one foot in the courts, for he is never certain that he may not run into some one at any moment. The intense concentration of mind required in speeding, the anxiety and the jar of the car—all tend to induce neurasthenia. The laws to regulate speeding are consequently not only in the interest of the public but of the automobilists themselves. Notthafft remarks that the attempts to limit the speed to a certain number of miles an hour does not answer the purpose. It would be better to make the general rule "No fast driving" apply to automobiles as well as to other vehicles, instead of setting a special speed limit. It is so often impossible to prove when this limit has been exceeded even when all know that the machine was being driven too fast.

Zeitschrift für klinische Medizin, Berlin

LXXII, Nos. 1-2, pp. 1-188. Last indexed Feb. 4, p. 389, and May 6, p. 1371

77 Sphygmobolometry: Determination of the Energy of the Pulse. (Der weitere Ausbau der Sphygmobolometrie oder energetischen Pulsdiagnostik.) H. Sahli.
78 Fourteen Cases of Chronic Lymphatic and Myeloid Leukemia with Necropsy in Three. K. Ziegler.
79 Relations Between Excessive Functioning of Glands with an Internal Secretion and Their Constitution. (Wechselwirkung der Drüsen mit innerer Sekretion. IV.) W. Falta, L. H. Newburgh and E. Nobel.
80 *The Circulation and the Diaphragm. (Kreislauf und Zwerchfell.) H. Eppinger and L. Hofbauer.
81 Reinfection with Relapsing Fever and Its Influence on the Course of the Disease. (Reinfektion beim Rückfallfieber.) S. Jarussow.
82 Action of Acetylsalicylic Acid. (Anwendung und Wirkung der Azetylsalizylsäure beim Typhus abdominalis.) S. Bondi.
83 Idem. (Experimentelle Beiträge.) S. Bondi and H. Katz.

80. **Circulation and Diaphragm.**—Study of the pulse in patients whose diaphragm was unusually high or low showed that the circulation in the legs was better when the diaphragm was high, as the quadrate foramen was thus left open. When the diaphragm was low, this foramen is more squeezed together and the flow of blood up from the lower part of the body is thus impeded. At the same time, deep breathing pushes the diaphragm low down and it thus presses on the liver and liver veins and thus promotes the circulation in the region.

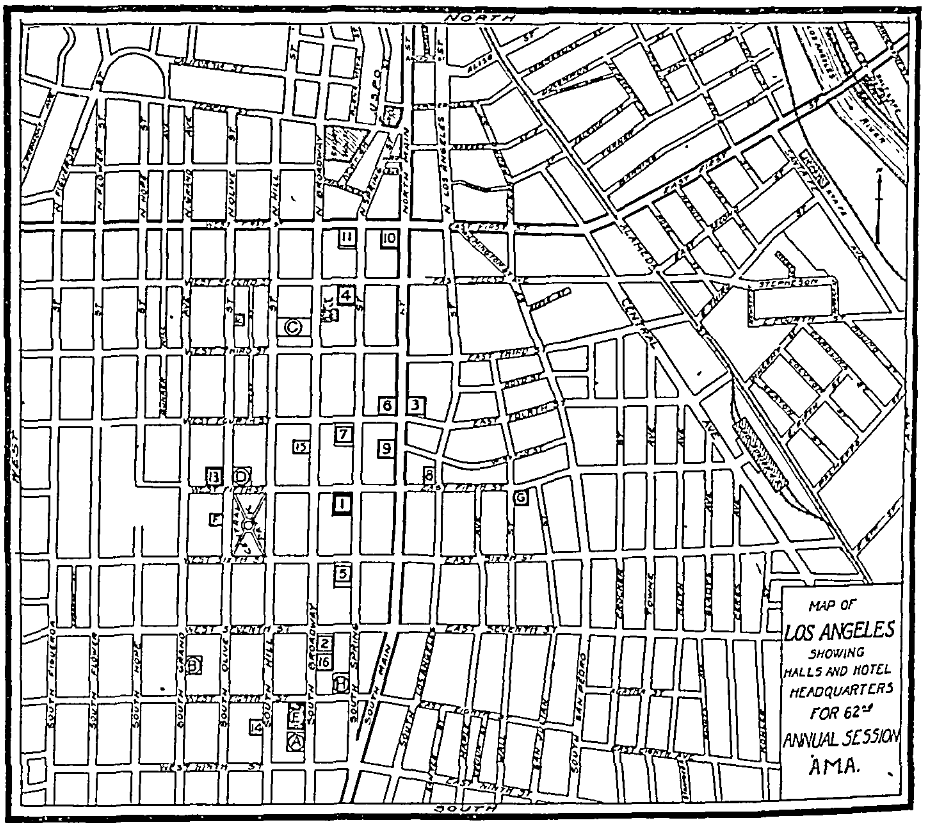
the most attractive. Some will want to see the Grand Canyon of the Arizona, a sight worth a trip across the country. Others will feel more favorable to the Pike's Peak country, Manitou, the Garden of the Gods and the various attractions of that part of the Rocky Mountains. Others will have a great desire to see the Yellowstone Park and its wonders. Still others will seek the northwestern part of the country—Oregon, Washington, etc., and the attractions of the Canadian Rockies on the Canadian Pacific. Not all of these can be seen on one trip, even on the round trip. Each individual should make up his mind what he is most anxious to see and then study the various itineraries and learn which one will best suit him.

The advantages of selecting one of the special trains, rather than to go by the regular trains, are the additional conveniences provided, the pleasure of traveling with friends and acquaintances, and the relief from the cares of looking after change of trains, hunting up conveyances for side trips, guides, etc., and the satisfaction of having everything provided in advance for comfort and for entertainment during the trip.

We mention below the special trains concerning which we have received information:

American Medical Special.—This luxurious Pullman train with full equipment will run from Chicago to Los Angeles via the Santa Fe and will leave Chicago at 8:00 p. m., Wednesday, June 21, reaching Kansas City at 9:00 a. m., Thursday, June 22, and running thence through New Mexico and Arizona to Los Angeles, which will be reached Monday, June 26, at 7:00 a. m. At Albuquerque the train will make a stop of an hour and a half to allow an inspection of the Fred Harvey collection of Indian handwork. Another stop will be made at Laguna, where an hour will be allowed to inspect the village of the Laguna Indians. The train will stop at the Grand Canyon for twenty-eight hours, giving opportunity to see the Grand Canyon of the Arizona. The desert of lower California will be crossed in the night. At San Bernardino the train will be divided—one section running through directly to Los Angeles, arriving at 7:00 a. m.—and the other going via Redlands and Riverside, stopping at each of these places to allow visits to points of interest. This section arrives at Los Angeles at 4:30 p. m., Monday. Special illustrated folders, reservations and full information may be obtained from G. T. Gunnip, General Agent, A. T. & S. F. Ry., 105 Adams Street, Chicago.

American Academy of Medicine Tour.—Another trip arranged from the east is that of the American Academy of Medicine, whose itineraries have been selected and arranged under the guidance of the passenger departments of the railroads to secure the most desirable trains and the best disposition of daylight sight seeing. Regular trains will be used. This party will leave New York over the Lehigh Valley railroad at 11:55 a. m., Monday, June 12, Philadelphia, at 12:30 p. m., and join the New York train at South Bethlehem at 2:12 p. m. and arrive at Buffalo over the Lehigh Valley at 10:27 p. m. The route will be thence over the Grand Trunk to Chicago, the Burlington to Denver and to Los Angeles over the Santa Fe. Interesting side trips and visits to the points of interest in Colorado and to the Grand Canyon will be provided for and Los Angeles will be reached Friday, June 23, in time for the sessions of the academy, which meets in advance of the American Medical Association. This party may be joined at various points along the route at a much later date, in case it is not desired to spend so much time on the going trip. Reservations for this party are to be made through the secretary, Dr. Charles McIntire, 52 North Fourth Street, Easton, Pa., from whom may be obtained the folder containing all details, both of the outgoing and of the return trip.



LIST OF SECTION MEETING PLACES AND HOTELS

Section, etc.	Name of Hall	Location of Hall	Hotel Headq'ters	Location of Hotel
General Hotel Headquarters			Alexandria	5th and Spring
Registration E	Hamburger (4th floor)	8th and Broadway		
House of Delegates H	Armory	8th and Spring		
Commercial Exhibit E	Hamburger (4th floor)	8th and Broadway		
President's Reception I	Shrine Auditorium	655 W. Jefferson		
Smoker E	Hamburger (roof garden)	8th and Broadway		
Scientific Exhibit E	Hamburger (4th floor)	8th and Broadway		
Information, P. O., etc. E	Hamburger (4th floor)	8th and Broadway		
Practice of Medicine A	Majestic Theater	8th and Broadway. 2	Lankershim	7th and Broadway
Nervous and Mental Diseases B	Walker (McKinley)	7th and Grand. 3	Westminster	4th and Main
Diseases of Children B	Walker (Lincoln)	7th and Grand. 3	Westminster	4th and Main
Pathology and Physiology C	Blanchard (Symphony)	3d and Hill. 4	Hollenbeck	2d and Spring
Surgery D	Baptist Auditorium	5th and Olive. 1	Alexandria	5th and Spring
Obstetrics D	Baptist Aud. (Berean)	5th and Olive. 5	Hayward	6th and Spring
Preventive Med. and Pub. Health E	Hamburger's	8th and Broadway. 1	Alexandria	5th and Spring
Pharmacology B	Walker (Garfield)	7th and Grand. 2	Lankershim	7th and Broadway
Ophthalmology F	Parish (2d floor)	6th and Olive. 6	Van Nuys	4th and Main
Laryngology and Otology F	Parish (1st floor)	6th and Olive. 7	Angelus	4th and Spring
Stomatology G	Dental College	5th and Wall. 8	King Edward	5th and Los. A.
General Session D	Baptist Auditorium	5th and Olive		

OTHER HOTELS ON THE MAP

9. Rosslyn. 10. Natick. 11. Nadeau. 12. Astoria. 13. Auditorium. 14. Percival Apts. 15. Broadway. 16. Yorkshire.

Burlington-Colorado Scenic Special.—This special train from Chicago to Los Angeles, via the Burlington, Denver & Rio Grande and the Salt Lake Route, will have the finest equipment of the Burlington road. It leaves Chicago at 11:00 p. m., June 21, and reaches Denver at 7:00 a. m., June 23. The party will spend four hours in Denver and vicinity, leaving at 11:00 a. m., June 23, reaching Colorado Springs (Manitou) at 1:30 p. m. The train will be parked and will remain there all night. This will give an opportunity for the party to go up Pike's Peak, visit the Garden of the Gods, Cheyenne Canyon, the celebrated "High Drive," the famous Iron and Soda Springs, and other points. The train leaves Manitou at 4:30 a. m., June 24, and reaches the Royal Gorge at 7:30 a. m., giving a splendid opportunity to see this wonderful gorge. At Glenwood Springs, an hour and a half will be spent, and Salt Lake City will be reached at 8:30 a. m., June 25. Four hours will be spent in Salt Lake, leaving at 1:00 p. m., and Los Angeles will be reached at 12:00 o'clock noon on June 26. This train traverses the mining regions of Utah and Nevada, and Rainbow Canyon and the Canyon of the Mojave River before reaching the orange country of southern California. This train has been arranged at the request of many physicians (represented by Drs. Robert T. Gillmore, Sidney Kuh and Charles B. Reed), who want to go by the Manitou and Royal Gorge route. Full details and illustrated booklets may be obtained from A. J. Puhl, General Agent, C. B. & Q. Ry., Chicago.

Chicago Medical Society Special.—The special train of the Chicago Medical Society will leave Chicago at 9:15 p. m., June 22, via the C. & N. W. Ry.; arrive in Omaha 9:15 a. m., June 23, leave Omaha 9:30 a. m., arrive in Salt Lake 1:30 p. m., June 24, spending the afternoon at Salt Lake, leaving at 5:30 p. m., June 24, via Salt Lake Route, arriving at Los Angeles at 4:30 p. m., June 25. This train will be provided with full Pullman equipment of the most complete and modern character. Meals in dining car will be served à la carte. At Salt Lake arrangements will be made for a special organ recital at the Mormon tabernacle, balance of the afternoon to be spent in sight-seeing. Leaving Salt Lake, the journey lies over the Salt Lake Route through Utah and Nevada, reaching the rich mining districts, passing through Caliente, where Rainbow Canyon is entered, with its great walls of rock of every shade; and Las Vegas. Entering California, the line traverses the canyon of the Mojave river and at San Bernardino reaches the famous Orange Belt of California. The train then runs through Riverside, Ontario and Pomona, cities situated in the fruit-growing section adjacent to Los Angeles. Arrangements have been made so that any physician anticipating telegrams en route will have same sent in care of this special train and be received promptly. Elaborate itinerary will be furnished on application to Dr. George F. Suker, Secretary, 103 State Street, Chicago.

Gates Special Train.—A special itinerary is being arranged by the Gates Tours of Toledo, O., with several optional return schedules. A special train will leave Chicago, June 20, stopping enroute at the Grand Canyon, and returning, trains will leave Los Angeles July 1. Full details of the trips, including the return schedules which include Alaska, may be obtained of the Gates Tours, Toledo, O.

Missouri Valley Special.—This special train, under the auspices of the Medical Society of the Missouri Valley and the Medical Association of the Southwest, will accommodate members from the central west and southwest. It will leave Kansas City Thursday, June 22, via the Santa Fe, and will also stop over one day for the trip to the beautiful Grand Canyon. It will arrive at Los Angeles on Sunday, after the trip through the orange country. The tour will be personally conducted and a special interesting itinerary is planned for the return trip. Full particulars may be obtained, and hotel and Pullman accommodations arranged for, through Dr. Charles Wood Fassett, St. Joseph, Mo.

New York and New England Special.—This is another train which has been planned in care of McCann's Tours by Dr. Wisner R. Townsend, Secretary of the New York State Medical Society. This train, fully equipped with modern conveniences and comforts, will leave New York, via the New York Central Lines, at 6:30 p. m., Monday, June 19, connecting with trains leaving Boston at 2:00 p. m., Worcester at 3:11 p. m., Springfield 4:40 p. m., and Pittsfield 6:30 p. m. It leaves Albany at 9:55 p. m., Utica 11:55 p. m., Syracuse 1:08 a. m., June 20, Rochester 2:45 a. m., Buffalo 4:30 a. m. The train will run thence via Cleveland, Indianapolis and St. Louis, and from Kansas City via the Santa Fe through New Mexico and Arizona, reaching the Grand Canyon, Friday, June 23, where twenty-eight hours will be devoted to sight seeing in this marvelous natural chasm, one of the wonders of the world. Los Angeles will be reached at 9:00 p. m., June 25. Time will be allowed to visit the famous orange groves and to view the other points of interest at Riverside and Redlands, as has been described above concerning the other trains. The return trip is one of some length and will include many other parts of the beautiful west which are to be enjoyed at leisure. Information concerning this tour and the daily schedule of the train, including the various possibilities on the return trip, may be obtained through Dr. Wisner R. Townsend, 125 W. 58th Street, New York City.

Pennsylvania Special.—From the east a personally conducted tour has been arranged under the direction of Dr. C. L. Stevens, Secretary of the Pennsylvania State Medical Society, Athens, Pa., in conjunction with McCann's Tours. The train will be of the highest grade Pullman equipment, including a gentlemen's club car and a ladies' club and observation car, with all the accessories and accommodations of the modern train *de luxe*. The special train will leave Jersey City Saturday, June 17, at 4:14 p. m., via the Lehigh Valley railroad, and may be joined at various points between there and Buffalo by passengers from New Jersey, eastern Pennsylvania and Maryland. The train will leave Buffalo via the Lake Shore at 4:30 a. m., June 18, running thence through Cleveland, Indianapolis, St. Louis, Kansas City, Santa Fe, and Albuquerque to the Grand Canyon, where a side trip of twenty-eight hours will be made. Thence the route will include the heart of the orange country in California, Riverside and Redlands, at both of which places time stops will be made. Los Angeles will be reached Friday, June 23, at 9:00 p. m. Full information concerning this tour is contained in a little booklet, which may be obtained from Secretary Stevens.

Eastern States Special.—Pullman cars to be attached to American Medical Special at Chicago over Santa Fe in care of Beekman Tourist Company, arranged by Dr. E. R. Campbell, manager of A. M. A. Outing Club, will leave Boston via Boston & Maine and New York Central Lines Tuesday, June 20, at 12:30 p. m., arriving at Chicago at 5 p. m. Wednesday, leaving Chicago at 8 p. m., joining American Medical Special. Members and friends may join anywhere en route. Special circulars, reservations, etc., may be obtained from Dr. E. R. Campbell, Bellows Falls, Vt.

RETURN TRIPS

As will be noted, several of these tours provide for the return trip by different routes, with interesting side trips. Full information about them can be obtained from the railroads or from the parties named above. In the advertising pages of The Journal, now and in later issues, will be found announcements of many of these railroads and trips. Members are urged to secure the booklets and folders issued by the railroads concerning these trips and post themselves in order to secure the greatest advantages from the visit to the west.

There are numerous ways of returning from the meeting, all of which offer advantages that will appeal to the members and their friends. The return trip from Los Angeles may be made by boat to San Francisco, Portland and Seattle, or by the southern routes over the Southern Pacific, the Rock Island, the Santa Fe, the Salt Lake route or through San Francisco by way of the Southern Pacific and Union Pacific, which offers opportunity for a side trip to the Yellowstone Park and a visit to Salt Lake and all the points of interest in Colorado. Or the return trip may be made by the northern routes—the Northern Pacific, the Chicago, Milwaukee and St. Paul, the Great Northern or the Canadian Pacific—visiting the cities of the northwest and Yellowstone Park.

PERSONNEL OF HOUSE OF DELEGATES

Membership of the Legislative Body of the Association

Below is a list of the holdover delegates and of the newly elected members of the House of Delegates, who have been reported to The Journal up to the time of going to press. A complete list is impossible in this issue as a number of state societies have yet to hold their meetings at which delegates will be elected.

STATE DELEGATES

ALABAMA
Mack Rogers, Birmingham.
W. H. Sanders, Montgomery.

ARIZONA
Ancil Martin, Phoenix.

ARKANSAS
Joseph T. Clegg, Siloam Springs.

CALIFORNIA
Joseph L. Milton, Oakland.
O. D. Hamlin, Oakland.
Granville MacGowan, Los Angeles.

COLORADO
Hubert Work, Pueblo.
Edward Jackson, Denver.

CONNECTICUT
E. J. McKnight, Hartford.
D. Chester Brown, Danbury.

DELAWARE
James H. Wilson, Dover.

DIST. OF COLUMBIA.
Wm. C. Woodward, Washington.

FLORIDA
J. Harris Pierpont, Pensacola.

GEORGIA
W. H. Daughty, Jr., Augusta.
H. F. Harris, Atlanta.

ILLINOIS
W. F. Grinstead, Cairo.
E. W. Weis, Ottawa.
S. C. Glidden, Danville.
J. E. Allaben, Rockford.
A. L. Brittin, Athens.
J. L. Wiggins, E. St. Louis.

INDIANA
A. C. Kimberlin, Indianapolis.
C. H. McCully, Logansport.
Miles F. Porter, Ft. Wayne.
F. A. Tucker, Noblesville.

IOWA
D. S. Fairchild, Clinton.
D. C. Brockman, Ottumwa.

CANAL ZONE
W. C. Gorgas, Ancon.

KANSAS
O. P. Davis, Topeka.
M. Trueheart, Sterling.

KENTUCKY
B. F. Van Meter, Lexington.
W. W. Richmond, Clinton.
Curran Pope, Louisville.
A. T. McCormack, Bowling Green.

LOUISIANA
Chas. Chassaignac, New Orleans.

MAINE
Alfred D. Sawyer, Ft. Fairfield.

MARYLAND
Ridgely B. Warfield, Baltimore

MASSACHUSETTS
Horace D. Arnold, Boston.
Homer Gage, Worcester.
O. J. Brown, North Adams.
F. H. Thompson, Fitchburg.
F. G. Wheatley, N. Abington.
Hugh Cabot, Boston.

MICHIGAN
E. T. Abrams, Dollar Bay.
F. W. Robbins, Detroit.
R. R. Smith, Grand Rapids.

MINNESOTA
E. F. McComb, Duluth.
George D. Head, Minneapolis.

MISSISSIPPI
J. W. Young, Grenada.

MISSOURI
A. W. McAlester, Kansas City.
J. D. Brummall, Salisbury.
C. R. Woodson, St. Joseph.

MONTANA
T. D. Tuttle, Helena.

NEBRASKA
P. H. Salter, Norfolk.

NEVADA
J. E. Pickard, Reno.

NEW HAMPSHIRE
Ferdinand A. Stillings, Concord.

NEW JERSEY
C. R. P. Fisher, Bound Brook.
Alexander Marcy, Riverton.
E. L. B. Godfrey, Camden.

NEW MEXICO
L. L. Cahill, Springer.

NEW YORK
J. Riddle Goffe, New York City.
W. H. Thornton, Buffalo.
H. S. Houghton, New York City.
J. E. Weeks, New York City.
D. H. Murray, Syracuse.
A. T. Bristow, Brooklyn.
Edward E. Cornwall, Brooklyn.
Henry L. Elsner, Syracuse.
James W. Fleming, Brooklyn.
Wesley T. Mulligan, Rochester.
Edgar A. VanderVeer, Albany.

NORTH CAROLINA
J. Howell Way, Waynesville.
J. F. Highsmith, Fayetteville.

OHIO
B. R. McClellan, Xenia.
George M. Todd, Toledo.
B. H. Blair, Lebanon.
D. O. Weeks, Marion.

OREGON
C. J. Smith, Pendleton.

PENNSYLVANIA
Americus R. Allen, Carlisle.
Alex. R. Craig, Philadelphia.
Geo. W. Guthrie, Wilkes-Barre.
John B. Lowman, Johnstown.
H. G. McCormick, Williamsport.
Thomas D. Davis, Pittsburg.
Thos. S. Arbuthnot, Pittsburg.
Fremont W. Frankhauser, Reading.
Wm. T. Hamilton, Philadelphia.

PHILIPPINE ISLANDS
W. E. Musgrave, Manila.

RHODE ISLAND
John Champlin, Westerly.

SOUTH CAROLINA
John L. Dawson, Charleston.
E. A. Hines, Seneca.

SOUTH DAKOTA
T. B. Smiley, Mt. Vernon.

TENNESSEE
Jere L. Crook, Jackson.

TEXAS
W. B. Russ, San Antonio.

UTAH
Aug. C. Behle, Salt Lake City.

VERMONT
J. N. Jenne, Burlington.

VIRGINIA
W. E. Anderson, Farmville.

WASHINGTON
J. R. Yocum, Tacoma.
Wilson Johnston, Spokane.

WISCONSIN
L. F. Bennett, Beloit.
C. S. Sheldon, Madison.
A. H. Levings, Milwaukee.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
J. A. Capps..Chicago

SURGERY
A. F. Jonas..Omaha

OBSTETRICS AND GYNECOLOGY
A. E. Benjamin..............................Minneapolis

OPHTHALMOLOGY
John C. Bossidy..................................Boston

LARYNGOLOGY AND OTOLOGY
H. W. Loeb.......................................St. Louis

DISEASES OF CHILDREN
A. C. Cotton..Chicago

PHARMACOLOGY AND THERAPEUTICS
Reid Hunt............................Washington, D. C.

PATHOLOGY AND PHYSIOLOGY
Walter L. Bierring Iowa City, Ia.

STOMATOLOGY
G. V. I. Brown.................................Milwaukee

NERVOUS AND MENTAL DISEASES
Theodore Diller.........................Pittsburg, Pa.

DERMATOLOGY
J. A. Fordyce.................................New York

PREVENTIVE MEDICINE AND PUBLIC HEALTH
J. N. Hurty.....................................Indianapolis

DELEGATES FROM GOVERNMENT SERVICES

Jefferson R. Kean...................United States Army
C. P. Bagg..........................United States Navy
G. B. Young...............U. S. P. H. and M.-H. Service

THE GENERAL MEETING

Program of the Opeing Meeting on Tuesday Morning

The General Meeting will be held in the Baptist Auditorium, Fifth and Olive Streets, Tuesday, June 27, at 10:30 a. m. This is the formal opening of the scientific functions of the Association and the only time the whole convention will be assembled in one place. The program is as follows:

Music.
Call to order by President William H. Welch, Baltimore
Invocation by the Rt. Rev. Joseph H. Johnson, Los Angeles.
Addresses of Welcome.
Dr. W. Jarvis Barlow, President of the Los Angeles County Medical Association.
Dr. Thomas W. Huntington, San Francisco, President of the Medical Society of the State of California.
Hon. H. W. Johnson, Governor of California.
Hon. George Alexander, Mayor of Los Angeles.
Introduction of foreign guests.
Report of Local Committee on Arrangements—Chairman, Dr. H. Bert Ellis, Los Angeles.
Introduction and Installation of the President-Elect—Dr. John B. Murphy, Chicago.
Address by the President—Dr. John B. Murphy.
Music.
Adjournment.

CLASS AND COLLEGE REUNIONS

Miscellaneous Information Concerning the Western Country and the Trip to Los Angeles. Entertainment En Route

As is usual at the annual meeting of the Association, there will be a number of class and college reunions. The times and places of holding these will be announced at Los Angeles.

The reunion of the alumni of Cook County Hospital will be held on the evening of Friday, June 30, at the Casa Verdugo, a resort in the foothills a short distance from Los Angeles, reached by a trolley line. An old-style Spanish dinner will be served under the pepper trees. The reunion is in charge of Dr. W. W. Richardson and Dr. Harvey L. Thorpe. Los

Angeles. Information concerning this dinner may also be had from Dr. William R. Cubbins, 29 West Madison Street, Chicago.

The annual *woman's banquet* will be given at the Hotel Westminster, Tuesday evening, June 27.

The local chapter of Alpha Epsilon Iota fraternity will give *a dinner to visiting* members at the Union League Club, Thursday evening, June 29.

Arrangements have been made by the King County Medical Society at Seattle, Wash., in connection with the Seattle Commercial Club, for a committee to entertain the members of the American Medical Association who may pass through Seattle on their way to attend the meeting or on their return.

The Riverside County Medical Society also invites all physicians to visit Riverside, take the 16-mile auto ride through the orange groves and enjoy the courtesies provided.

At Los Angeles the Chamber of Commerce maintains an interesting museum of the products of California and the West, both mineral and agricultural. Practically the whole state may be seen in picture form at these lectures.

OTHER MEETINGS

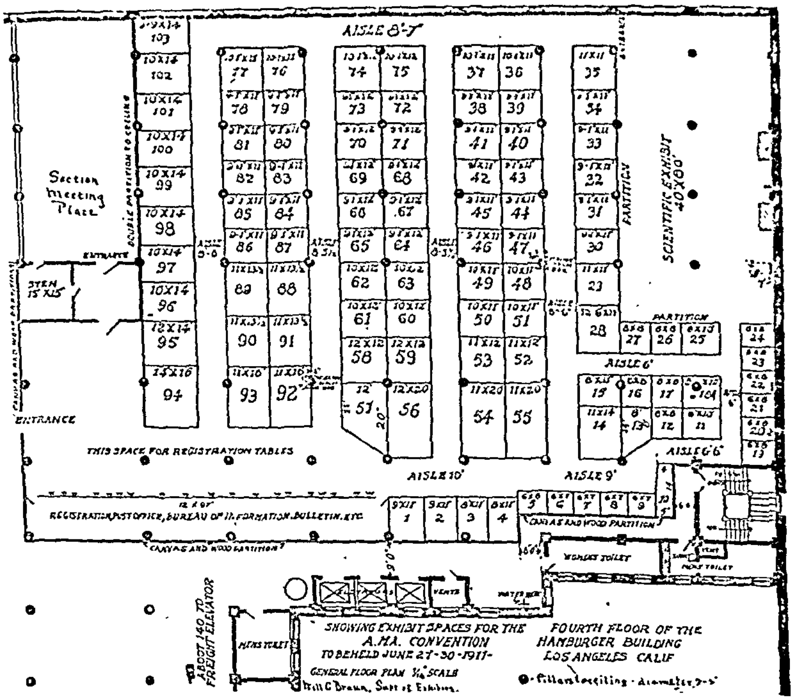
Among the other scientific meetings which may be attended by members and vistors to the Los Angeles meeting of the A. M. A. are the following:

The convention of the National Association for the Study and Prevention of Tuberculosis, which meets at Denver, June 20 and 21. Stopovers will be allowed at Denver, as well as at other points, on the going trip to Los Angeles, and the meeting of the Tuberculosis Congress may be attended, and then the special trains running through Denver may be joined for the remainder of the trip. Information may be had from Dr. Livingston Farrand, 105 East Twenty-Second Street, New York.

The American Academy of Medicine will hold its sessions in Los Angeles on Saturday and Monday preceding the meeting of the A. M. A. For full information address Dr. Charles McIntire, 52 N. Fourth Street, Easton, Pa.

The annual meeting of the American Medical Association Public Health Education Committee will be held in the Y. W. C. A. Building, 251 S. Hill Street, Los Angeles, Monday, June 26, at 5 p. m. Particulars and program may be obtained from Rosalie Slaughter Morton, M.D., Chairman, 701 Madison Avenue, New York.

The twelfth annual session of the American Association of Medical Examiners will be held at Los Angeles, June 26 and 27, 1911. Information may be obtained from Dr. Liston H. Montgomery, president, 108 North State Street, Chicago.


AISLE 8'-7"
SCIENTIFIC EXHIBIT 40X60
PARTITION
Section Meeting Place
ENTRANCE
THIS SPACE FOR REGISTRATION TABLES
AISLE 10'
AISLE 9'
AISLE 6'
REGISTRATION, POSTOFFICE, BUREAU OF INFORMATION, BULLETIN, ETC.
CANVAS AND WOOD PARTITION
WOMEN'S TOILET
MEN'S TOILET
ABOUT 140 TO FREIGHT ELEVATOR
SHOWING EXHIBIT SPACES FOR THE A.M.A. CONVENTION TO BE HELD JUNE 27-30-1911-
FOURTH FLOOR OF THE HAMBURGER BUILDING LOS ANGELES CALIF
GENERAL FLOOR PLAN 1/8" SCALE
Will C. Braun, Supt of Exhibits

Floor plan of the Hamburger building, fourth floor, showing the location of the Registration Bureau, where each member should register as soon as he can name his hotel; also the Postoffice, Scientific Exhibit, Daily Bulletin office and the Commercial Exhibit. The accompanying list shows what firms will occupy the various numbered spaces.

THE COMMERCIAL EXHIBIT

Outlook for an Interesting Exhibit of Distinct Quality

The commercial exhibit at the Los Angeles meeting will be found in Hamburger's hall on the fourth floor of the Hamburger Building at Eighth Street and Broadway. In this commodious and well-lighted room will be found an exhibition of books, surgical instruments and appliances, *x*-ray and other electric apparatus, and of pharmaceutical preparations and foods, which, while it may not be as large as the exhibits at some of the eastern meetings of the Association, will be of high quality.

Efforts will be made by all of the exhibitors at this meeting to demonstrate their various exhibits rather from the scientific side than from the purely commercial aspect, and the demonstrators of the scientific apparatus, drugs, etc., will be men who are experts in their respective lines. The exhibit will, therefore, have a distinct educational value to physicians who will devote some time to it.

All correspondence with reference to reservations should be sent to Mr. Will C. Braun, superintendent of exhibits, 535 Dearborn Avenue, Chicago. Dr. W. H. Kiger, Consolidated Building, Los Angeles, is the chairman of the Los Angeles committee on commercial exhibits.

The accompanying diagram of the exhibit hall shows the locations of the booths. The following firms will be represented at this exposition. Other reservations have also been made by firms who have not submitted descriptions of their exhibits.

Publishers and Books

D. APPLETON & CO., NEW YORK, SPACE 2.—This exhibit will be under the direction of the manager of the San Francisco office and a competent corps of salesmen who will show the new editions. A work which will excite interest is their "Cross Section Anatomy," by Dr. Albert C. Eycleshymer of St. Louis. Other publications are Dieulafoy's "Practice of Medicine;" Pick and Hecht's "Clinical Symptomatology;" Kolle's "Plastic and Cosmetic Surgery;" Reik's "Diseases of the Ear, Nose and Throat," and a new edition of Pusey's "Dermatology." The above mentioned books have all been published since January 1, 1911. They will also show advance sheets of Guiteras' "Urology," and Kelly's "Diseases of the Kidneys."

AUSTIN'S STEREOSCOPIC X-RAY ANATOMY, SAN DIEGO. SPACE 11.—A collection of carefully selected life-size stereoscopic *x*-ray pictures, mounted on cards 12 by 17 inches, each of the pair being 8 by 10 inches, taken with the most modern of interrupterless machines, of all the normal joints, of the joints during development, of all the arteries injected, of the cavities, and parts of the intestines, being an anatomy at a glance for student and practitioner. Pictures are viewed through a prism stereoscope (making pictures of this size possible), mounted, so as to change without changing the focus.

P. BLAKISTON'S SON AND CO., PHILADELPHIA. SPACE 58.—Among the books of great interest and sound service at Blakiston's exhibit are: Hurry's "Vicious Circles," Collins and Mayou's "Pathology of the Eye," Eden's "Gynecology," the recent editions of Tyson's "Practice," Wilcox's "Treatment," "Practitioners' Medical Dictionary," J. J. Kyle's "Ear, Nose and Throat," Wiley's "Foods and Their Adulteration," Brophy's "Oral Surgery," Bransford Lewis and E. G. Marks' "Cystoscopy," and a translation of Curschmann's "Nervous Diseases," edited by Charles W. Burr. The splendid works by John B. Deaver should attract attention because of his recent recall to the professorship in the University of Pennsylvania.

Wappler Electric Mfg. Company. Spa PHIA. Space .88.—
play of electro-medical and surgical app picture display this
will show many new and radical featu vulged, but those who
have a new, brilliant lens system show. The profession should
upright picture, a brighter field, an bel and Mall's "Human
angle of vision than has ever been o ost famous American and
system is being adapted to all of th rd, Jr.'s, "Internal Medi-
including the pharyngoscope. Also ers; and new editions of
less *x*-ray and therapeutic appar ary, Ortner's "Treatment of
and all kinds of high-frequency tr fifth German edition, Emer-
machine, the Wappler wall plat Essentials of Medicine," Cohn-
machine, etc. tive Canal," Schmidt's "Pain,"

Foods, Milk P edition, Davis' "Mother and

Bass Islands' Vineyards n Diagnosis of Syphilis," etc.
Visitors are invited to look ook and Publishing Company,
and try their Catawba "Bass firm will show the new edition
an unfermented Grape Juice reatment of Diseases of Women,"
recommended on the grou text-book for the general practitioner; eficial "Golden Rules of Diagnosis and Treatment of Diseases;" second edition of Zahorsky's "Golden Rules of Pediatrics;" new third edition of Munro's "Suggestive Therapeutics;" Beck's "Use of Bismuth Paste in Chronic Suppurations;" Longyear's "Nephrocoloptosis," and Dock-Bass' "Hookworm Disease;" advance sheets of Loeb's "Operative Surgery of the Nose, Throat and Ear;" the new edition of Kocher's "Operative Surgery" and Allbutt's "System of Medicine;" also a general line of new German and French books. Dr. L. A. Duck will be in charge.

Rebman Company, New York. Space 12.—An assortment of highly scientific books, many of which are illustrated by the four-color process, which renders a life-like appearance of diseases, especially those of the skin, possible, and the latest literature on "Salvarsan" will be found. Of interest is Whitby's "Makers of Man," a psychologic study of the individuality of the great men of the world. A book on an entirely new subject is Kilner's treatise, "Human Atmosphere." A long list of new publications by Rebman Company recently will be on view, which it will pay the visiting physician to enquire about. Their art prints are worthy of attention.

W. B. Saunders Company, Philadelphia and London. Spaces 94 and 95.—Just within the entrance and opposite the Bureau of Registration and Information and the Post Office, this house will exhibit Musser and Kelly's "Practical Treatment;" Cabot's "Differential Diagnosis;" Davis' "Operative Obstetrics;" "The 1910 Papers by the Staff of St. Mary's Hospital, Mayo Clinic;" Anders and Boston's "Medical Diagnosis;" Morrow's "Diagnostic and Therapeutic Technic;" Pilcher's "Practical Cystoscopy;" Buchanan's "Veterinary Bacteriology;" Keen's "Surgery;" Mumford's "Surgery;" Crandon's "Surgical After-Treatment;" Cotton's "Dislocations and Joint Fractures;" Sisson's "Veterinary Anatomy;" also advance sheets of Dr. Howard A. Kelly's "Cyclopedia of American Medical Biography."

William Wood & Co., New York. Spaces 3 and 4.—Have spared no expense in exhibiting their high-class medical books. Noteworthy among these is the "American Practice of Surgery," which has just been completed. An epoch-making book is Steadman's Medical Dictionary. Witthaus' Manual of Toxicology has just issued from the press. Also, a revised edition of Walker's Introduction to Dermatology, containing forty-three colored plates, besides numerous engravings. "Joint-Tuberculosis," by Leonard W. Ely, will attract much attention. In addition to the above, one hundred new books by these publishers attest their continued activity and progressiveness.

Pharmaceuticals and Biologic Products

Abbott Alkaloidal Company, Chicago. Spaces 56 and 57.—The special features of the exhibit of this company will be the demonstration of the methods of manufacturing granules and tablets of the active-principle and similar remedies by skilled laboratory workers, illustrating both the hand and machine methods. In addition this company will present a large line of alkaloidal and active-principle remedies, as they extract them from the drugs and in finished forms. Their interesting line of Council-passed specialties will also be demonstrated.

Arlington Chemical Company, Yonkers, N. Y. Space 1.—Will be occupied jointly by the Arlington Chemical Co. and the Palisade Manufacturing Co., makers of liquid and dry peptonoids and hemaboloids. In accordance with the well-known policy of these manufacturers there will be a display of interesting and instructive charts of food values, together with an exhibit of the various constituents of the preparations. Courteous and capable representatives will be ready to explain the preparations and answer any questions regarding them. A handsome souvenir is in preparation, which will be presented to every physician who visits the exhibit.

Armour & Co., Chicago. Space 93.—Remarkable progress has been made in the last decade in the field of the ductless glands, which are gradually yielding their therapeutic secrets to the industry of the experimental biologist. Brilliant results are now obtained by pure suprarenal preparations and the purified thyroid proteids. Hypersecretion of the pituitary is definitely known to result in acromegaly and gigantism. Recently the thymus has been suggested for relief in inoperable cancer. Many lecithins and organ lipoids apparently play an important rôle in immunizing processes. The organotherapeutic exhibit of this firm will be demonstrated by scientific experts and should be of great interest.

Edward G. Binz, Los Angeles. Space 22.—This display will consist of apparatus in full operation, showing the process of distilling and refining eucalyptus oil from the leaf to the finished oil. It will be a demonstration of the production of a superior pharmacopeial product and not of a proprietary article with a trade name.

Burroughs Wellcome & Co., New York. Space 54.—This firm will display a selection of their products under "Tabloid," "Soloid," "Vaporole," "Enule," "Wellcome," and other of their well-known trade-marks, representing modern methods as applied to medicinal preparations. Also "Tabloid" brand compressed surgical dressings and bandages, including "Tabloid" brand bismuth gauze, a recent addition to the firm's list; medical equipments of extreme compactness and portability, ranging in size and scope from the equipment similar to that carried by many well-known explorers, to a physician's breast pocket case; "Tabloid" hypodermic and ophthalmic pocket cases, including the popular "Mussell Shell" hypodermic case, etc.

Cutter Laboratory, Berkeley, Cal. Space 82.—Serum Antitoxin and Globulin Antitoxin will be displayed by this firm; also their syringe containers with flexible needle connection. An interesting demonstration showing the steps employed in the preparation and data respecting the administration of the various antitoxic products will make this exhibit of unusual scientific value.

Fairchild Bros. & Foster. Space 98.—Will exhibit "ampoules" for hypodermatic injection, trypsin, pancreas extract (non-enzymic), lecithin; capsules especially designed for the administration of pancreas gland products; "Laibose," soluble wheat and whole milk in granular form; Fairchild's culture peptone from entire beef, especially prepared for bacteriologic work.

Hoffmann-La Roche Chemical Works, New York (branch of F. Hoffmann-La Roche & Company, Basle, Switzerland, and Grenzach, Germany). Space 37.—This exhibit will repay careful inspection. A duplicate of the exhibit that was made at the St. Louis Convention, when it was declared one of the most "aristocratic" in the building. Here will be found such alkaloids as homatropin, eserin, pilocarpin, hyoscin and a host of others. The specialties, Digalen, Thiocol, Thigenol, Airol, Secacornin, etc., will be exhibited and their therapeutic qualities explained by competent representatives.

H. K. Mulford Company, Philadelphia, Space 92.—Will exhibit five cases of biologic products containing, respectively, diphtheria antitoxin and serums, bacterial vaccines and tuberculins, diagnostic reagents, including serodiagnosis of typhoid fever and syphilis; rabies vaccine, and Neisser bacterin, mixed. The exhibition will also comprise working bulletins describing these products.

Henry K. Wampole & Company, Philadelphia. Space 76.—This company will make an exhibit of elegant pharmaceuticals, comprising pulverous pills, compressed tablets, fluidextracts, elixirs, effervescent salts, capsules, etc., and direct especial attention to the new things brought out during the past year, and to its ability to produce efficient and elegant products for the physician.

Instruments and Furniture

W. D. Allison Company, Indianapolis. Spaces 102 and 103.—Have added several new and useful tables and cabinets to their line, and will have on display a new style, medium-priced table, two new and very attractive designs in instrument cabinets, and being now the owners of the patents on the Yale and Oxford chairs, these articles will be presented in connection with their high-grade automatic tables, medicine and instrument cabinets and specialities. All of these have, been proved indispensable appliances in the practice of medicine during the past twenty-five years.

FRANK S. BETZ CO., CHICAGO AND HAMMOND, IND. SPACES 62, 63, 64 AND 65.—This company will make an exhibition of a general line of surgical instruments, special razor-operating knives manufactured by experienced razor makers, nose and throat instruments imported from Vienna, also *x*-ray coils, electrical outfits for general and diagnostic purposes and a variety of artificial legs. The special feature of the exhibit will be the great variety of operating knives, among which will be shown the Mayo, Murphy, Cubbins, Weist and Old-English models.

CAVASCOPE CO., ST. PAUL, MINN. SPACE 8.—This company will exhibit the Cavascope, which combines an auriscope, a nasal speculum and two styles of tongue-depresser. It is self-illuminated from a dry battery, which may be obtained anywhere, an effective one being the Tungsten battery, which will give 400 per cent. greater service than any other. The instrument is easily sterilized and may be carried in the pocket.

F. A. HARDY & COMPANY, CHICAGO. Space 89.—A complete line of eye, ear, nose and throat surgical instruments as well as a number of ophthalmologic specialties will be exhibited. The special features of this exhibit will be a number of hand-made instruments entirely new in design, surpassing anything ever shown heretofore. The special Los Angeles edition of the "Hardy Messenger" will illustrate each of the new designs and will be distributed at the exhibit.

KENISTON AND ROOT, LOS ANGELES. Spaces 90 and 91.—A general line of standard surgical instruments, physicians' office equipment and hospital supplies will be demonstrated and displayed by this firm. In this exhibit will be included that of the Kny-Scheerer Co., of New York City.

E. B. MEYROWITZ, NEW YORK. Spaces 48, 50 and 51.—Ophthalmologic apparatus, eye, ear, nose and throat instruments embracing many recent inventions, among which may be mentioned a new model of ophthalmometer, Yankauer's eustachian instruments, a full line of bronchoscopic instruments and illuminating apparatus will be found. This firm manufactures and will show the well known Marple electric ophthalmoscope, Coakley electric light stand and the Meyrowitz socket rheostat. The new Meyrowitz-McCaa unipulsator will be shown, a complete instrumentarium for *x*-ray and high-frequency work.

PACIFIC SURGICAL MANUFACTURING CO., LOS ANGELES, CAL. Space 19.—A complete line of physicians' apparatus and hospital equipment and supplies will be exhibited by this company.

Apparatus

ANATOMIK FOOTWEAR COMPANY, NEW YORK. SPACE 78.—An exhibit of men's, women's and children's Anatomik shoes for the relief of mild cases of flat foot and for the prevention of foot troubles. Anatomik shoes are made on a special last devised by Dr. Harlan P. Cole of New York. Mr. Alick Weir, in charge of the exhibit, will be glad to explain the features of the special shoes made by this company for bad cases of flat-foot and for various forms of talipes.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y. Space 79.—They will show a line of their newest models of microscopes, microtomes, centrifuges and other laboratory apparatus and supplies for physicians' use. A new instrument, a convertible balopticon will be shown, which projects lantern slides, opaque illustrations and objects and microscopic objects; in fact it can be used for any known form of projection. It will be especially appreciated by those interested in the projection of microscopic objects.

DEVILBISS MANUFACTURING COMPANY, TOLEDO, O. SPACE 15.—The use of the atomizer in the treatment of nose and throat affections will be interestingly covered in the complete exhibit of the DeVilbiss Manufacturing Company of Toledo, O., who will have on display a full line of their well-known medicinal atomizers, nebulizers and powder blowers.

DUNTLEY MANUFACTURING CO., CHICAGO, SPACE 81.—This exhibit will consist of the Duntley pneumatic cleaner, and the new Duntley air cooler and purifier. The latter is a little device with a capacity of from 200 to 600 cubic feet of air per minute. The air passing through water, is cooled and purified, and all of the floating matter is removed—thus reducing the danger of infection in operating rooms and hospitals. The firm will exhibit two types of the air cooler and purifier. The exhibit will be in charge of Dr. Carl L. Barnes, who will gladly furnish laboratory reports and descriptive circulars to all physicians who may be interested.

ERNST LEITZ, 1
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microphotographic appar

RANDALL-FAICHNEY CO.,
ard clinical thermometers a
syringes will be exhibited by
pursued in testing and gradi
demonstrated for the benefit of

TAYLOR INSTRUMENT COMPAN
60 AND 61.—This exhibit will
samples, covering particularl
sphygmomanometer, their "Tyc
alysis and urinary glass ware,
charge of representatives who are prepared to
tions of readings of both diastolic and systoli
with the "Tycos" sphygmomanometer. A new
Dr. Rogers' "Tycos" sphygmomanometer, givi
esting data on the determination of blood-pre
distributed.

WILMOT CASTLE COMPANY, ROCHESTER, N. Y. SPAC
This company will exhibit a four-piece Rochester sterilizing outfit, "physician's" size, comprising an instrument sterilizer, a dressing sterilizer and hot and cold water sterilizers. Instruments are sterilized by boiling; dressings by circulating steam; also a three-piece outfit of a smaller size, called the "Specialist's," adapted for eye, ear, nose and throat work. A Castle pressure dressing sterilizer will show the separate generator, the complete surrounding of the sterilizing chamber (except in front) by a steam chamber, the single valve control, the production of a vacuum in the sterilizing chamber and the simplicity and effectiveness of its locking device.

Apparatus—Electric

ELECTRO-SURGICAL INSTRUMENT CO., ROCHESTER, N. Y. SPACE 5.—In addition to a complete line of all its well-known electrically lighted surgical instruments the company will exhibit a number of new instruments, representing the highest present development of electrically lighted surgical and diagnostic instruments, constructed after the designs of eminent specialists, who have taken particular interest in making suggestions for improvements based on their practical experience. Besides the instruments themselves the exhibit will include the latest forms of batteries, controllers and transformers.

KELLEY-KOETT MFG. CO., COVINGTON, KY. Spaces 68 and 69. —This company will make a demonstration of their *x*-ray appliances under the direct supervision of Mr. J. Robert Kelley, designer and senior member of the firm, who extends a cordial invitation to the profession, especially those of the Pacific Coast, and past patrons who may desire information relative to apparatus already in use.

ROCHESTER SURGICAL APPLIANCE COMPANY, ROCHESTER, N. Y. Space 17.—These makers of electrically lighted instruments, will exhibit their latest models for use as diagnostic aids in the examination of affections of the nose, throat, esophagus, urethra, etc. Instruments for transillumination tests, also electrical controllers, etc., will be other noteworthy features.

SCHEIDEL - WESTERN X-RAY COIL CO., CHICAGO. SPACES 29 AND 30.—Will have an unusual scientific display of advanced apparatus for making *x*-ray negatives and diagnoses by the most approved methods. The increased popularity of the *x*-ray for diagnosis and the attention given to improved technic has resulted in wonderful improvements. They will demonstrate the latest interrupterless machine with which the fastest negatives, showing detail, have ever been made, and in addition to this their small portable instrument. The former radiographic special will also be there, as well as a stereoscope, plate changer, *x*-ray protection tube-stand, etc.

VICTOR ELECTRIC COMPANY, CHICAGO. SPACES 32, 33, 34 AND 35.—This company will display between seventy-five and one hundred different pieces of electro-medical apparatus, which will be demonstrated by a corps of experts. The past year has brought out many new developments in physiologic therapeutics in the way of new machines, modernized methods, improved technic, etc. The Victor Electric Co. have had to increase their facilities recently by erecting a new building at Jackson Boulevard and Robey street, Chicago, which they are now occupying.

ce 77.—In their dis-
WAPPLER ELECTRIC MFG. COMPANY. Spa PHIA. aratus this company
play of electro-medical and surgical app pict es. Their cystoscopes
will show many new and radical featu vulge ing the right-sided and
have a new, brilliant lens system show . The a 30 per cent. larger
upright picture, a brighter field, an ibel btained before. This lens
angle of vision than has ever been o ost f eir diagnostic instruments
system is being adapted to all of th rd, a new type of interrupter-
including the pharyngoscope. Also ners; tus, perfect for rapid *x*-ray
less *x*-ray and therapeutic appar ary, eatment, the Excell treatment
and all kinds of high-frequency tr fifth with their perfect sinusoidal
machine, the Wappler wall plat Esse
machine, etc. tive

Foods, Milk P edit reparations, Etc.

Co., SANDUSKY, O. SPACE 13.—
BASS ISLANDS' VINEYARDS n Di up the exhibit of this Company,
Visitors are invited to look OK A Islands Grape Juice." This is
and try their Catawba "Bass firm and a most pleasing beverage,
an unfermented Grape Juice reat d that Catawba grape juice is
recommended on the than the juice of the dark Concord grape,
tioner; eficia "Gotains less tannin.

Diseases;" second NDENSED MILK CO., NEW YORK. SPACES 99, 100
Pediatrics;" new ll exhibit their Malted Milk and call particular
peutics;" Beck's " the special process by which it is prepared and
tions;" Longy gestion of the casein of the milk due to this process,
worm Disea is peculiar to the Borden Company. They also empha-
of the N size the palatability of the food, it being free from excessive sweetness. They point with pride to their record of fifty years' handling of milk products as a guarantee of the excellence of their goods. They will furnish analysis and comparative table of energy values to all physicians.

FRANCO-AMERICAN FOOD CO., JERSEY CITY. SPACE 36. —Franco-American broths for invalids will be shown as a useful necessity in the sick room diet, easily digested and very stimulating. The company calls attention to these broths as containing 33⅓ per cent. more food value than soups, purposely made without vegetables, spices or seasoning, and retained by the most delicate stomach. They are packed in half pint sanitary tins, so as to remain fresh as long as the tin is left unopened. A full line of these foods will be exhibited.

HAWAIIAN PINEAPPLE PRODUCTS CO., LTD., SAN JOSE, CAL. SPACES 23 and 24.—Physicians will be given an opportunity to investigate the merits of Dole's Pure Hawaiian Pineapple Juice, which is pressed and bottled by this firm in Honolulu.

HORLICK'S MALTED MILK CO. SPACES 72, 73, 74 AND 75.—This firm will show Horlick's Malted Milk and urge its use as an easily digested food product in powder form, prepared from pure fresh cow's milk, combined with the extracts of malt, barley and wheat, the starch of which has all been converted by the action of the diastase of the malt, and ready for immediate use by simply dissolving in hot or cold water; uniform and reliable, manufactured under ideal sanitary conditions, with the experience, methods and apparatus evolved through work of over a century in this line.

MELLIN'S FOOD COMPANY, BOSTON. SPACE 14.—To the visiting physicians who so desire this company's representatives will be pleased to show analyses and food values of Mellin's Food itself, and as prepared with milk; also to explain its use in the modification of milk. They will also cheerfully answer questions regarding the variation of proportions of food constituents necessary to obtain the most satisfactory results in individual cases.

WELCH GRAPE JUICE COMPANY, WESTFIELD, N. Y. SPACES 66 and 67.—Will have an exhibit of their well-known product, as usual.

Artificial Limbs and Supportive Appliances

AMBULATORY PNEUMATIC SPLINT MANUFACTURING CO., CHICAGO. SPACE 10.—Makers of ambulatory pneumatic fracture splints, orthopedic appliances, artificial limbs, trusses, corsets, elastic hosiery and "Ambumatic" washable abdominal supporters. Under the direction of Mr. Sæmann the exhibit will consist of a scientific demonstration of the Ambulatory Pneumatic Splint, the application and use of these walking adjustable splints for the comfortable and successful treatment in bed or walking of fractures of the lower limbs, including those of hip and hip-joint disease. "Ambumatic" supporters for all kinds of abdominal or pelvic support will also be shown.

CARNES ARTIFICIAL LIMB COMPANY, KANSAS CITY, MO. SPACE 59.—Will exhibit an artificial arm and hand made of steel and fiber of such ingenious mechanical construction as to enable the wearer automatically to bend the elbow, bend and turn the wrist and open and close the fingers, and write; strong enough to pick up and carry a weight of fifty pounds with ease. Demonstrated by men wearing the arm for upper and lower amputations.

WM. JONES, DENVER, SPACE 9.—An automatic, adjustable truss will be demonstrated by this firm. This truss is s to have an automatically operating, even pressure, comp sating movement that is governed by the motion of the bo so that it will yield reciprocally with easy, positive, varia and equal pressure action to the variable breathing and ot natural movements of the body. There are many other pr tical features of this appliance that will be shown.

Mineral Waters

APOLLINARIS AGENCY COMPANY, NEW YORK. SPACE 7 This company will exhibit Apollinaris Water as a mildly al line and naturally effervescent table water, bottled only at Apollinaris Spring, Neuenahr, Germany, and only with own natural gas, as stated on the label. The same compa will also exhibit "Apenta," the Hungarian natural aperi water, calling attention to its reputation for its well prop tioned content of magnesium sulphate and sodium sulphate.

NATIONAL WATER COMPANY, WAUKESHA, WIS. SPACE 38. Will exhibit "White Rock," the natural water from t celebrated White Rock Spring, and "Still Rock" in the vario sized bottles and will show a package that is unique amo bottled waters. New bottles are used and are sterili before filling. The newly patented sealing contrivance w prove interesting to the physician who wishes to have t water reach his patient in the same uncontaminated conditi in which it exists as it flows from the spring. Mr. Edwa Westveer and Mr. R. M. Heath will have charge of t exhibit.

Sanatoria

ALLIED SANITARIUMS OF CALIFORNIA, LOMA LINDA, CA SPACE 25.—This exhibit will be installed under the dire tion of the College of Medical Evangelists, whose represent tives will explain the methods employed at their vario institutions.

INDIANA SPRINGS CO., KRAMER, IND. SPACE 20.—For t benefit of physicians who have never visited Mudlavia th company will maintain an exhibit showing in pictorial det their special therapeutic agent, the Mudlavia Bath. Begi ning with a view of the mud deposit in the natural state, t various steps in the process to completion of the bath will shown; likewise the buildings and grounds with their speci equipment for maintaining a high-grade sanitarium.

POTTENGER SANATORIUM, MONROVIA, CAL. SPACE 25.—Th institution, which is located but forty-five minutes by troll ride from Los Angeles, and is conducted exclusively for t scientific treatment of tuberculosis, will display views an literature describing the methods employed and accommod tions offered patrons of their sanitarium.

Et Cetera

AMERICAN CASE & REGISTER COMPANY, SALEM. SPAC 86.—Will exhibit a full line of their physicians' and surgeon systems for account keeping and case recording. This exhib will be in charge of competent men who have been traine especially in this line of work. They claim to be the pionee in manufacturing complete physicians' and surgeons' system and they wish physicians to write now for all literature per taining to their various systems so that they can study then up, and then see the real article in Booth 86.

DEIMEL LINEN-MESH SYSTEM CO., NEW YORK. SPACE 53.—According to their usual custom this company will show thei goods at Los Angeles and have reserved space 53 for the pur pose. The California headquarters of this concern is at 14 Sansome Street, San Francisco. The Dr. Deimel underwea (Linen-Mesh) hardly needs any introduction. This well-known underwear was first shown at the annual meeting held at Baltimore in 1895.

SPIRELLA COMPANY, MEADVILLE, PA. SPACE 85.—Corsets and belts filled with the "Spirella stay," a wire bent in serpentine form, will be shown as a valuable aid in caring for medical cases demanding support, such as floating kidney, some cases of hernia and pendulous abdomen. The firm states that the anatomic shaping of the corset, coupled with the flexible, resilient Spirella stay used therein, allows complete freedom of muscular action. The Surgical Belts are light, simple, practical, and are said to be valuable in postoperative cases.